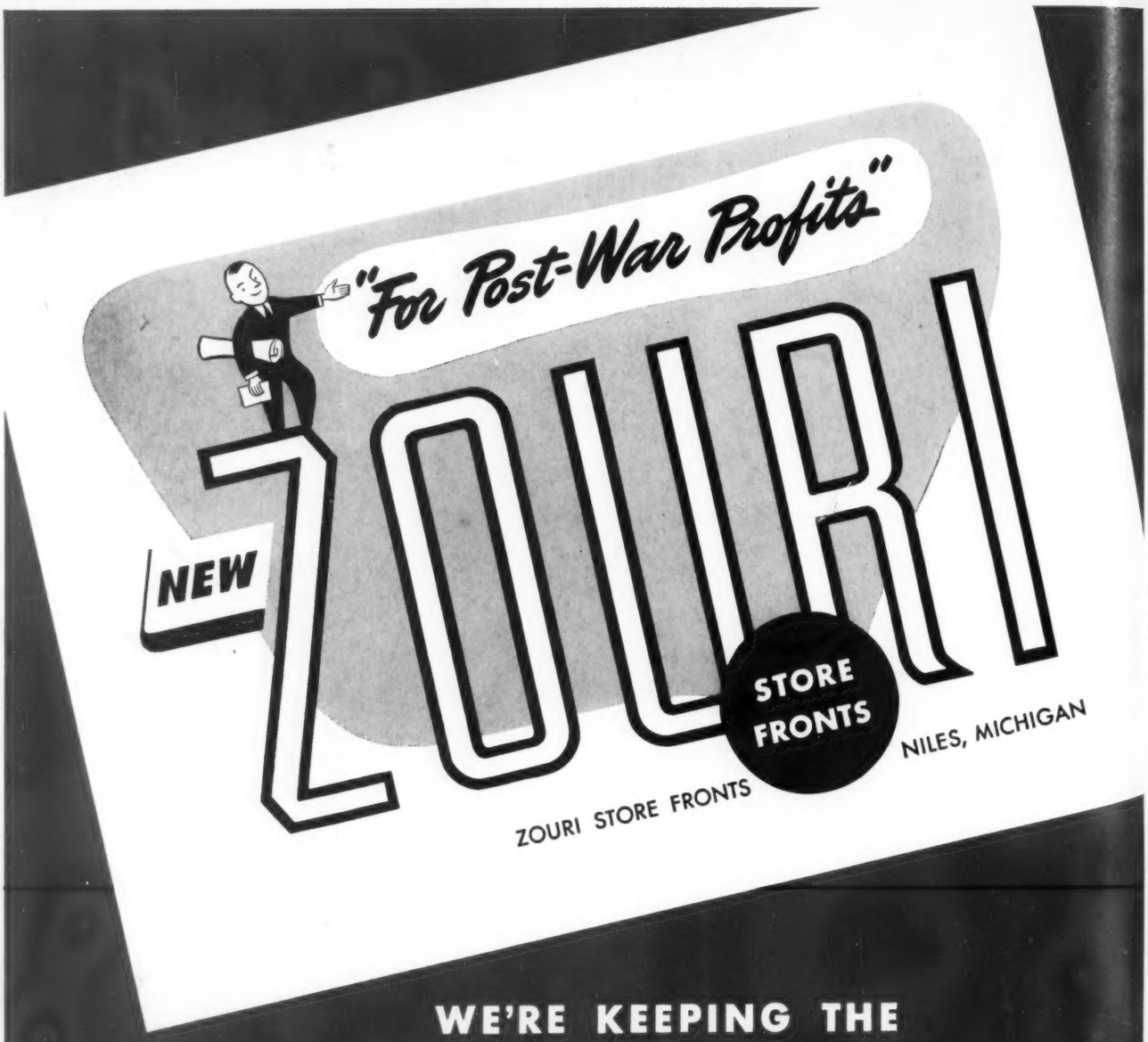
SEPTEMBER 1942

9

NEW PENCIL POINTS



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What do you want in the post-war store front construction? ZOURI would be glad to hear from you!

New Pencil Points, September, 1943

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Next Month:

Houses, particularly the equipment in them which makes living comfortable and economical, with an attempt to peer behind the veil and see what post-war equipment may be like. Included will be Carl Koch's most recent house, in Massachusetts; a house in California by Anshen and Allen, who have spared no pains in designing equipment; and many others from Maine to Oregon. The October issue should have high reference-value for every architect who hopes to do another house, come peace.

KENNETH REID, Editor; FRANK G. LOPEZ, Managing Editor; DON GRAF, Technical Editor; BERNARD RUDOFSKY, Associate Editor; MIRIAM WHITE, Editorial Assistant; JEDD REISNER, STANLEY SHARP, Drafting; PHILIP H. HUBBARD, Publishing Director; JOHN G. BELCHER, Advertising Manager; JOHN ZELLNER, Circulation Manager.

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How to
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in Lumber

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4-SQUARE LUMBER

VIEWS

Opinions from readers
Remarks from the editors
Data wanted
Changes of address

Dear Editor:

I want to tell you how greatly interested I was in the article on an Architectural Center in your last issue. I am delighted to find that some group is at last letting the public know that the "master builder" of today is necessarily in the plural, not in the singular. How any sane human can persuade himself, and try to persuade others, that he has accumulated sufficient knowledge to justify this title, is more than I can understand.

If the Architectural Center can secure sufficient funds from the manufacturers without tying their hands, I believe it should be the biggest event, from the standpoint of real design, that has taken place in the last quarter of a century. Let me know if I can help this movement in any way.

REGINALD D. JOHNSON, Architect
Los Angeles, California

Which is American?

Dear Editor:
Your leading article "Who is American" is a timely warning for Americans to rescue the Old World from its decrepitude by redeeming her own promise of being the New World.

ERIC MENDELSOHN, Architect
New York, New York

Dear Editor:
I applaud the stand of Mr. Cameron Clark, Architect, recently taken by him in a letter to you. I am quite certain that less preoccupation on your magazine's part and on the part of many of our educators with the Bauhaus, Machine to live in, Beauty be damned school of thought would be beneficial.

As Mr. Novarec retorts in reply to Mr. Clark's letter, Mr. Clark is a nationalist and again I applaud; it is quite time we drop all the Communist, Popular Front, Machine Architecture imported from Europe, which, if I am any judge, does not at this time show any very great results in the improved social status of the people line, there at home.

In short I recommend that we cease to honor these German, Ovsky and Furrin instructors, alleged Architects, etc. and further, it might be just as well if they went back to Europe or wherever they come from and assist in the rebuilding of it after we complete knocking it down.
It is quite possible that if that occurred we Americans might return to normalcy.

WALTER JOHN SKINNER, JR., Architect
Bridgeport, Connecticut

Dear Editor:

In regard to your column "On Being An Architect" by William Lescaze in the June, 1943, issue may I express my opinion as follows.

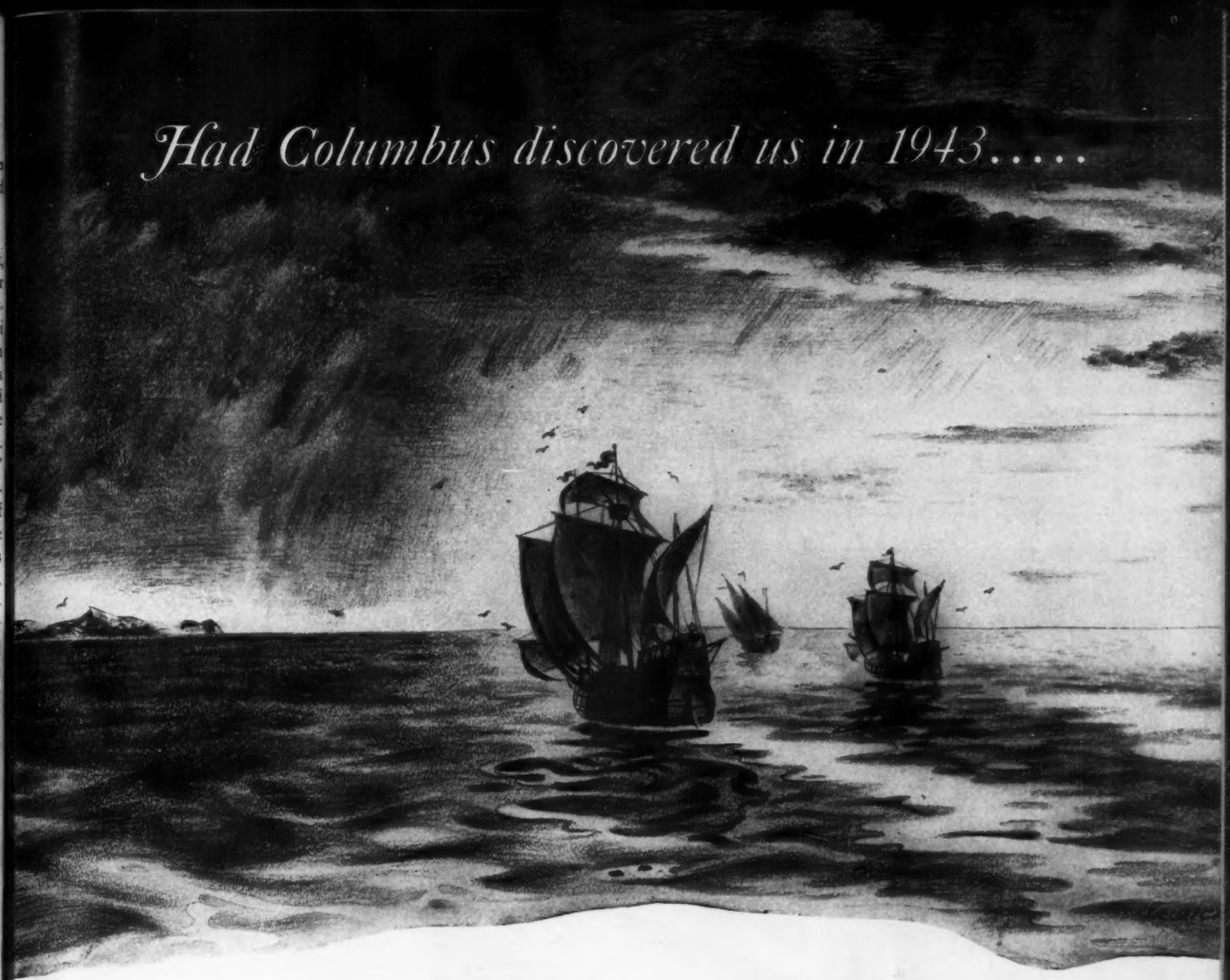
If Mr. Lescaze is condemning the classics, Renaissance, Gothic, etc. in the design of architecture, he therefore must condemn sculpture in its endeavor to capture the grace, life, and personality of the human being or animal; he also must belittle the poet who is able to write poetry in any given meter, the author who is capable of inventive imagination on any given subject. Just so, the architect should be capable of designing in any type or period of architecture—either past or future.

Specialists came in with the ten (10%) percent down-payment plan. Especially the specialists who have not lived long enough to have their pet theories proven to be either beautiful or of sound design.

The whole trend of Mr. Lescaze's thought, expressed in the paragraphs quoted in your magazine is nothing more than an excuse for inability; no more than an alibi of a person who is in the wrong profession and yet has not the insight to realize his existence as "being a square peg in a round hole." His so-called Modern Architecture is, in reality, primitive and not modern. Even Mr. Lescaze would not "point up" or "carve up" his body to meet the public. No, indeed! He would make use of that 'frosting of the cake'; he would clothe it in a good looking suit, shirt, etc., as his Gary-Cooper-posed picture illustrates. Modern Architecture is not to be condemned. But, then, neither are the other periods. I do not dislike my lovely old Grandmother just because she was born in the last century. There is something beautiful, romantic, and provenly "lived" about the past: the smell of an old book, the worn stair, the tarnished ornament. If a man does not capture and absorb at least some of it—he cannot have *LIVED*.

JAMES GABRIEL RESH
Pasadena, California

LOUIS LA BEAUME
EUGENE S. KLEIN
LA BEAUME AND KLEIN
ARCHITECTS
ST. LOUIS
(1)
MACON A. ABBITT
T. F. A. UNLAND
August 13th, 1943.
Mr. Kenneth Reid, Editor,
New Pencil Points,
330 West 42nd Street,
New York City, New York.
Dear Ken:-
Your review of the "Fountain Head" is not only shrewd but just. I particularly like the headline.
I am awaiting as sensible an appraisal of the Architectural Center idea. Possibly the same headline could be used again.
This old globe has served as a Human Environment Laboratory for a good many eons now, and many observers have come to the conclusion that "One Man's Kocher Meat is Another Man's Poison".
With kind regards from the Heat Center where we are striving to determine, by actual experiment, just how high the temperature can rise without dethroning the reason.
Yours as ever,
LAL:LD



HE WOULD HAVE FOUND.....

▶ *A land of 130,000,000 free and brave people ready to defend the true principles on which a courageous nation was built.*

▶ *Men setting forth to the Old World and valiantly fighting on land, sea and in the air—determined to win the greatest war in the annals of world history.*

▶ *Mothers, wives and sweethearts wiping their tears as they heroically find their places beside men in defense plants . . . the armed forces and on the home-front.*

▶ *A United people—proud and willing to make every sacrifice in defending their ideals and shaping the destiny of a Brave New World.*

▶ *Forty-eight stars on a Spangled Banner leading us through each perilous fight—that LIBERTY and JUSTICE shall never perish from this earth.*

★ ★ ★ ★

These are not the things Columbus saw in us the day he landed on these shores. For, little did he realize the potentialities of that strange, new world he found . . . how on a day to come not even the chasm of the Seven Seas would be too spectacular to bridge for bringing lasting Peace to all of Humanity. THESE ARE THE THINGS AMERICA HAS DISCOVERED HERSELF.

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VIEWS

Thoughts on Architectural Practice

The following article was sent to us for publication in these columns by Arnold A. Weitzman, Architect, of Detroit, Michigan. It was also published in the bulletin of The Michigan Society of Architects.

At the last meeting of the Michigan Chapter of the A.I.A. and M.S.A. Mr. Watts Shelly, Executive Secretary of the Michigan State Board of Examiners for Architects, Engineers and Surveyors told the architects emphatically that it is their concern to see to it that weaknesses in the law governing professional practices be eliminated. On the surface nothing new was said; yet the strong emphasis and pathos with which this timely warning was sounded, should awaken professional architects, each one, to think seriously of ways and means to improve and to protect their professional practice.

(a) The last depression hit the architectural and engineering professions the hardest. The many architects of small but excellent professional offices were completely disorganized or compelled by those hard circumstances to close their establishments and look for employment in order to sustain themselves. When the preparedness program started and then followed by the war work program these architectural firms were not revived. The government officials, justly, thinking of nothing else but efficiency, as a rule, placed orders only with firms having fairly good size organizations. The immediate beneficiaries of this program were, therefore, just the few large *professional* firms, about whom nothing but praise can be said. The smaller firm architects remained only spectators of this national activity in which the technical profession was called upon to play such an important role.

On the other hand because of the fact that the mere possession of an organization was the criterion for placing of war contracts, many firms operating under various names suggesting engineering or architecture, but in reality doing no such work but detailing various kinds of shop works, were able to establish themselves as so-called engineers and architects and became "giants" in the arena of professional competition. As mentioned above, from the standpoint of the government officials, who had no way to discern the corn from the chaff, this was a natural procedure. On the other hand our professional societies, unlike the medical and dental professions, were totally unprepared to give the nations' war leaders their guidance in "who is who" in the profession. The result is very bad. Instead of efficiency these mushroom like overgrown, mammoth engineering and architectural tinkerers have created an enormous waste in materials and, through their inefficiency, a waste in precious time.

If the engineering and architectural societies had immediately arisen to the occasion they could have advised the government how to utilize the smaller professional offices as well as functioning units to work efficiently and with economy to our resources.

Professional Architecture and Engineering Practice could have been reestablished with its great benefit to the nation now at war and even more so in peace. This error still remains uncorrected. The combined strength of architects and engineers must now find ways and means to reestablish themselves in independent professional practice, instead of being reduced to mere wage earners employed by selfish financial interest under some professional disguise.

Prior to the last depression architecture in America had reached a high point of refinement. A marvelous intellectual growth is noticeable in this country's architecture up to that time. From now on it may decline more and more, because of the large engineering and architectural fac-

(Continued on page 88)

White cement floors can be made with any Portland Cement that is white—but, to make an outstanding, light reflecting, sanitary white cement floor—the floor you want—you need MEDUSA WHITE, the original White Portland Cement with its exclusive and distinctive white color. There is no guessing about the quality of the white in this cement, it has a 33-year service record in hundreds of buildings to prove exactly what it will do, not only in making white floors but also in fine Terrazzo, cement tile, beautiful stucco, cast stone, etc. Yes, you need the distinctively different white of MEDUSA WHITE for your postwar building. Write for data.

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NEWS

Design and construction
Developments afield
Building regulations
Related professions
Products progress

The probable volume of war housing construction for the current fiscal year as tentatively forecast by the NHA Director of Information is as follows.

PUBLICLY FINANCED — per presentation to Congress in May, there was contemplated construction of approximately 90,000 temporary family units, 70,000 temporary dormitory units, and provision for approximately 40,000 family units through conversion of existing structures. The estimated cost of this construction and conversion totaled approximately $400,000,000. In addition, there were approximately 75,000 units of various types previously programmed which had not been started as of June 30, 1943.

PRIVATELY FINANCED — contemplated construction carried 90,000 family units plus approximately 100,000 such units authorized under outstanding quotas but not started as of June 30, 1943. This indicated total of 190,000 family units would involve, it is estimated, between $900,000,000 and $1,000,000,000 in private funds.

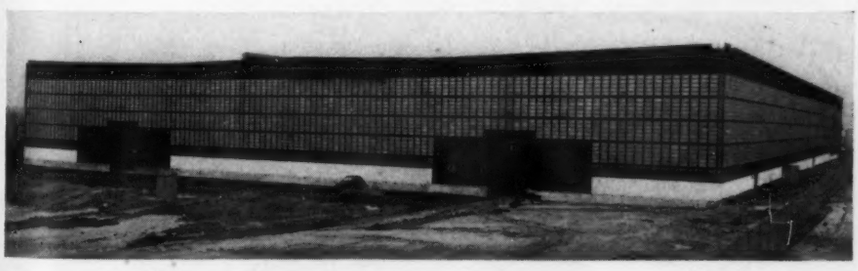
The tentative program for the current fiscal year also contemplates the provision of 40,000 units through privately financed conversions but no estimates are available as to the probable cost of such conversions.

The Committee for Economic Development—whose goal is to help business, on a company by company basis, to plan now for postwar employment—has recently issued a "basic document" entitled "Plan Postwar Jobs—Now." Its material has been organized to be helpful to local community committees in their campaign work. To date there are 705 such committees and it is expected that there will be 1200 to 1500 soon, meaning one in every town of 10,000 or more as well as in some of the smaller places. Headquarters for this committee are in the Department of Commerce Building, Washington 25, D. C.

Two groups which are working toward prompt adjustment of the building industry to peace time conditions are meeting during September. On the 9th and 10th of September leaders in the material field met in New York City under the sponsorship of The Producers' Council and made plans for a larger meeting to be held there September 20th. In Chicago there will be a meeting of the mortgage bankers later in the month to formulate a program for postwar realty financing. Russell G. Creviston of Chicago, head of the committee meeting there, said "Unless the ban on civilian construction is eased or withdrawn the end of the war may find the private construction industry operating at its lowest level of all times. . . . The major problem confronting the industry today, particularly the manufacturers of building materials and equipment, is that of developing plans for shortening drastically the interval elapsing between the end of the war and the day when civilian construction will have returned to a normal level."

Of significant interest to the architectural profession is the growth of air express as recently reported by the Air Express Division of the Railway Express Agency. The rapid expansion of air communications with their attendant airports and structural facilities is a field in which the architect and city planner is to play a larger and larger part.

The occasion for this report was the observance of the 16th anniversary, on September 1st, of commercial air express, it being in 1927 that the first regularly-scheduled air express service was started in the United States. The figures now show that international air express, flown between 350 U. S. and Canadian airport cities, and Central and South America, Mexico, Bermuda, and Alaska, amounted to 87,420 shipments in the first six months of 1943, an amount approximately 7% over 1942.



A BLACKOUT PLANT, on the east coast, designed to conserve critical materials. Instead of window glass, the plant has more than an acre of compressed wood panels. Fluorescent lamps simulate daylight working conditions. Nearly 2,000 tons of steel were saved in the construction when compared to pre-war standards. The plant covers 4 acres and produces radio equipment for the Army.

Exhibitions: Metropolitan Museum of Art, Pennsylvania German Designs (opens Oct. 26); Architecture, Furniture, and Decorative Arts of the early XIX Century (opens Nov. 10); Hagia Sophia and Its Restoration (Nov. 24—Jan. 2); Anvil, Forge, and Foundry, drawings from the American Wing (through Sept. 30).

The Exhibition of Plastics which was held during the first half of September at The Architectural League of New York was probably the largest and most comprehensive display of plastics ever held. The varied uses of plastics, during the war period and during the peace period to come, were stressed.

Portland, Oregon, has reacted dramatically to the urgent need to plan now for postwar work which will occupy the millions to be plunged suddenly from war and war industry into the civilian occupation pool.

A 60-day, $100,000 planning study for the City of Portland will be made under the leadership of Robert Moses, New York City's Park Commissioner, assisted by a staff of 50, including members of his department and other architects and engineers. If their proposals at the conclusion of this study for the revamping and redeveloping of the city for postwar life and business are feasible, the city is prepared to float a huge bond issue to carry out the plans drawn up, according to T. H. Banfield, Chairman of the Oregon State Highway Commission, who released some of the information to reporters.

Although Mr. Banfield made the statement that Portland's progressive move was probably the first of its kind in the United States, similar accelerated planning for other cities has been initiated previously under leadership of the National Resources Planning Board, as reported in August 1943, NEW PENCIL POINTS.

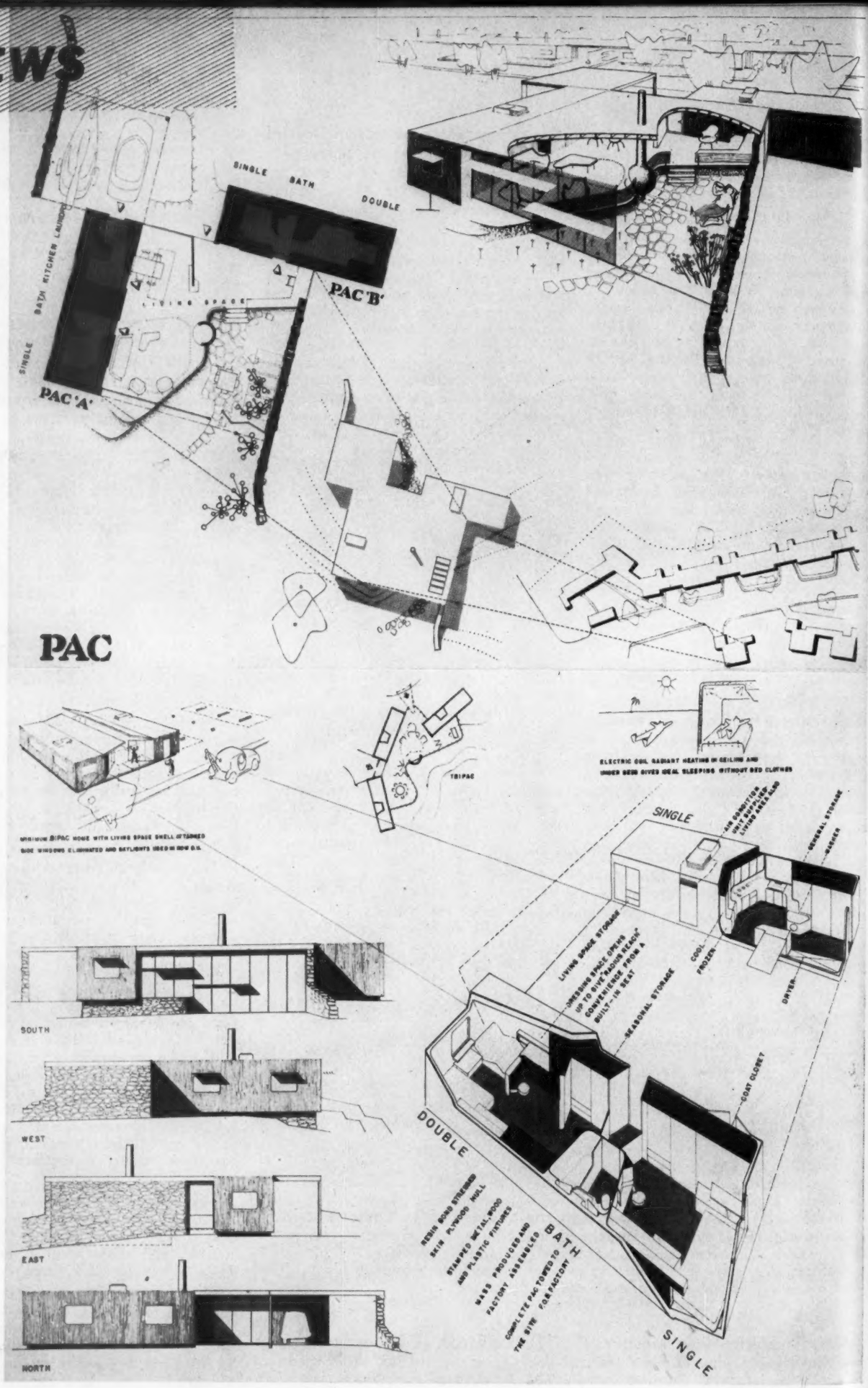
In its approach this Portland project is reminiscent of NRPB's work in Corpus Christi, Tacoma, and Salt Lake City. NRPB worked on the principle that responsible citizens representing every factor in the community should be consulted directly or indirectly, that they should have a hand in the replanning of their community, that their interest in the project is a necessity if the resulting plans are to receive continued public support. Mr. Moses will have in Portland an opportunity to demonstrate any ability he may have to take the public into his confidence, to search for the considered opinions of others and give the community the benefit of their experience and knowledge as well as of his own great executive ability and his humanitarian purposes.

Instrumental in starting this project and in bearing the expenses thereof were the City of Portland, the County of Multnomah, the Port of Portland, the Portland Dock Commission, and other agencies, as well as Henry J. Kaiser and his son.

Mr. George E. Spargo, executive officer of the Parks Department of New York City, will precede Mr. Moses to Portland where he will initiate the work. On the staff will be W. Earle Andrews, consulting egineer; Gilmore D. Clarke, landscape architect; J. J. Darcy, district engineer of the New York State Department of Public Works; Lewis L. Delafield, Jr., Attorney; James F. Evans,

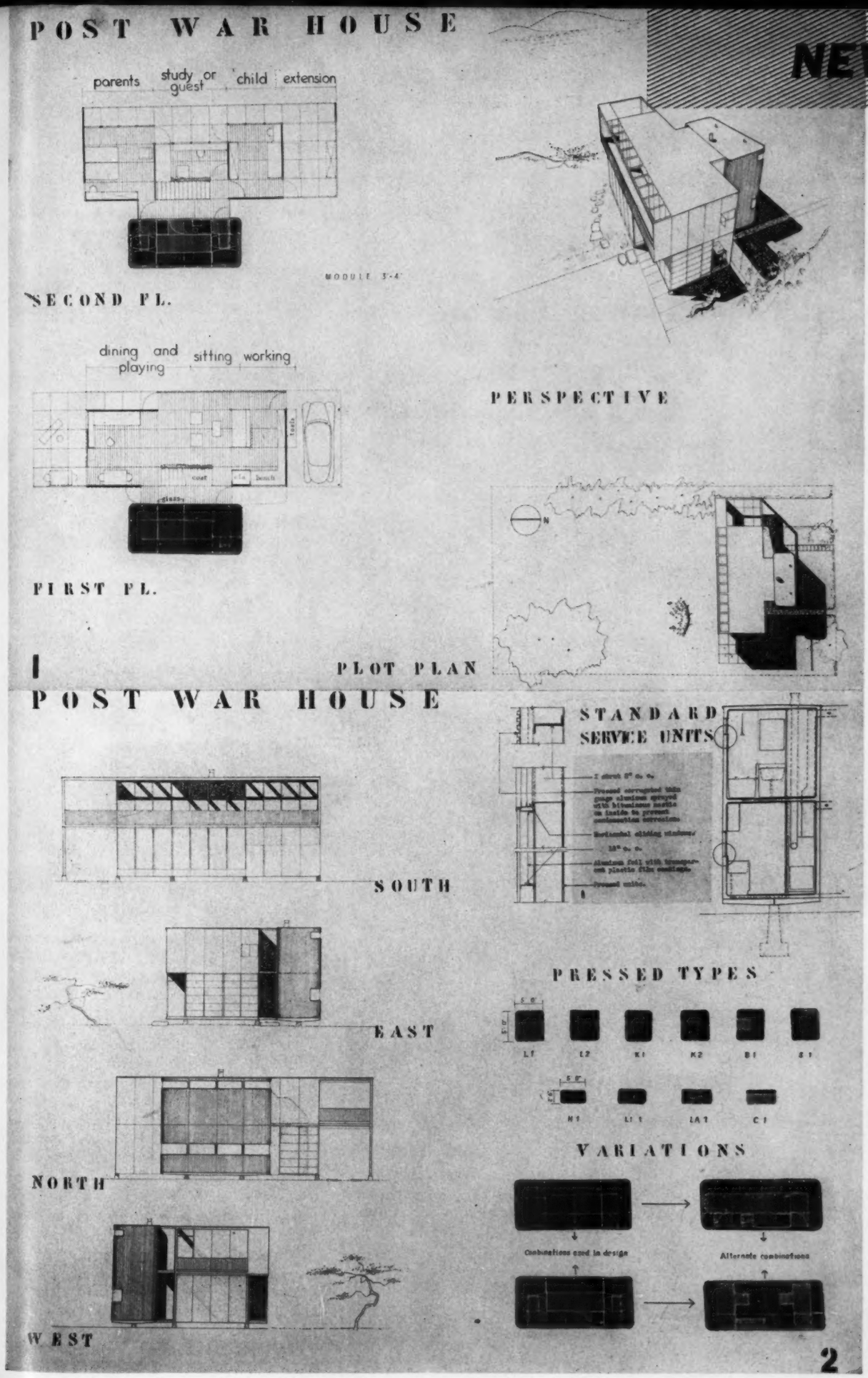
(Continued on page 82)

Design For Postwar Living



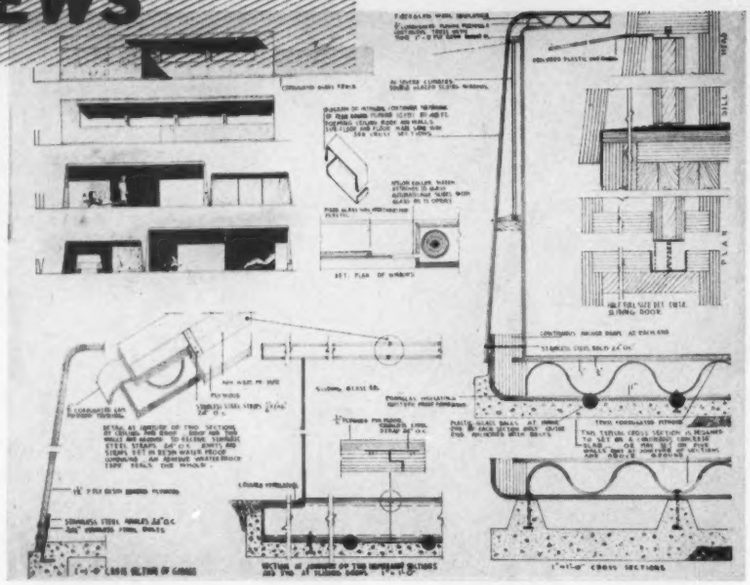
A competition for the designing of the postwar house was held under the sponsorship of California Arts and Architecture in association with a group of manufacturing concerns. Shown above is the first prize won by Eero Saarinen and Oliver Lundquist and on the opposite page is the second prize awarded to I. M. Pei and E. H. Duhart.

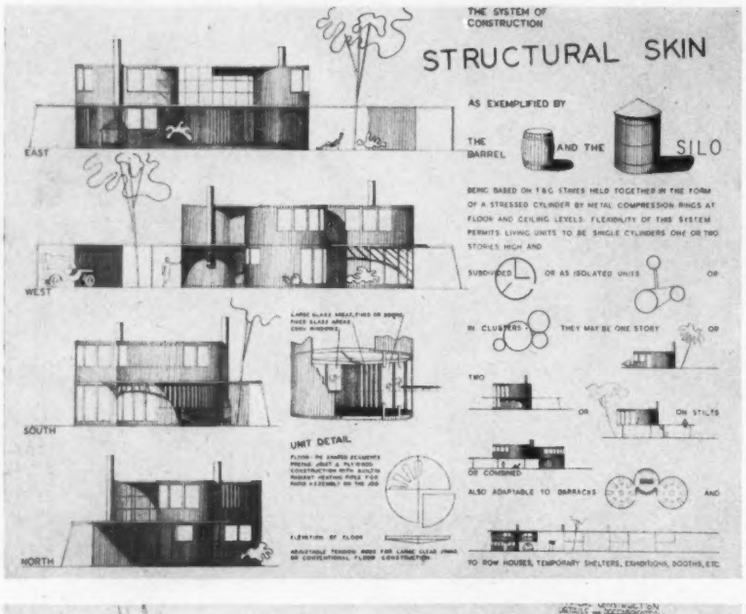
Members of the jury were: Sumner Spaulding, F.A.I.A., who has been active on the Civic Center and on the Mu-

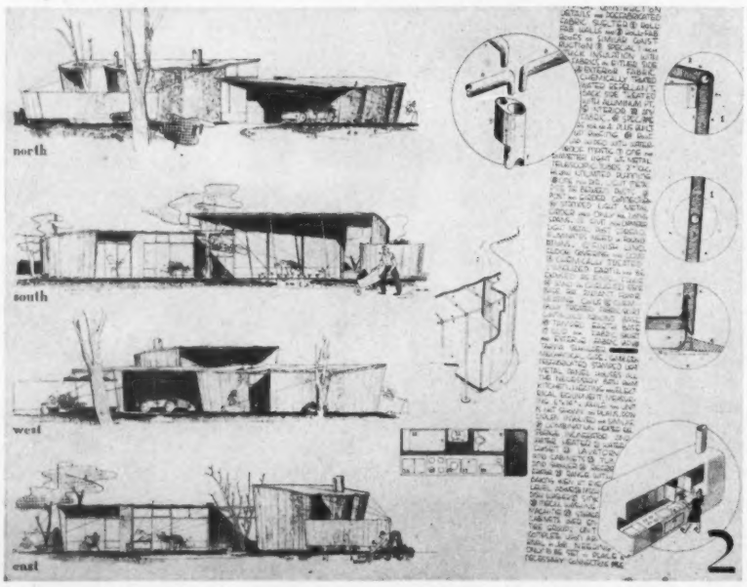


Photos Julius Shulman

nicipal Airport of Los Angeles as well as in other residential and public works; Charles Eames, who has worked extensively in the field of industrial design; Richard J. Neutra, A.I.A., whose work is very well known, due to his extensive practice, mostly in the west; John Leon Rex, A.I.A., formerly associated with Summer Spaulding, and now design engineer at the U. S. Naval Operating Base, San Pedro, California; and Gregory Ain, who won the







Top, elevations and structural details of the third prize design which was won by Raphael S. Soriano. Middle, the elevations and explanation of the system of construction used in the design submitted by Theodore Luderowski. Bottom: elevations and details of the design submitted by Ralph Rapson and David Runnetts.

Guggenheim Fellowship in 1940 for low cost housing.

FIRST PRIZE WINNERS:

Eero Saarinen, a first prize winner, son of Eliel Saarinen, attended art school in Paris and Yale University, has done extensive city planning research, worked on Crow Island School, Winnetka, Illinois, and has competed in several competitions in which he has won prizes. At present he is working for the Office of Strategic Services, Washington, D. C.

Oliver Lundquist has worked on world's fair projects and as an industrial designer in the office of Raymond Loewy. He, too, is now employed in the Office of Strategic Services, Washington, D. C.

SECOND PRIZE WINNERS:

I. M. Pei studied at M.I.T. where he won medals and a traveling fellowship. He worked as research assistant at the Bemis Foundation, did concrete design at Stone and Webster, held the Wheelwright Research Fellowship, Harvard, and is now working in the office of Walter Gropius.

E. H. Duhart studied in France and in Chile, did research and private practice in Santiago, taught in the University of Chile, and studied under Walter Gropius at Harvard while taking his master's degree.

THIRD PRIZE WINNER:

Raphael S. Soriano has worked with Richard J. Neutra, practiced in Southern California and elsewhere, has lectured, and has had his work extensively published here and in foreign countries.

Honorable mentions went to Susanne and Arnold Wasson-Tucker, to Fred and Lois Langhorst, to George A. Storz, to Bernard H. Bradley, and to Royal McClure.

Sixty percent of all the plans submitted were based on prefabrication, either the module system, the unit system, or a combination of the two. Much attention was given to sliding and folding partitions; roofed-in living areas bordered by functional units; new and practical arrangements of kitchens, baths, service spaces: slab foundations containing piping for plumbing, electricity, heating; walls of plywood or metal sheeting, plastics, or glass; and flat roofs. Perhaps the most universal feature of all the plans was the melting together of the living room and the patio. Exteriors are in a variety although the traditional period types of architecture are absent. Materials were often native ones and varied but interior planning varied little from Maine to Texas. 74 percent of the plans were for one-story houses. Beneath many of the designs submitted could be seen the premise of advanced community planning ideas.

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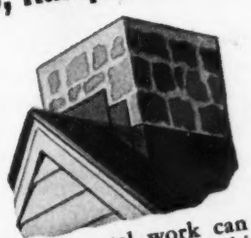

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REVIEWS

Books
Periodicals
Bibliographies
Manufacturer's literature

Books

Required Reading for School Architects

The American School and University, 1943. Fifteenth annual yearbook. Published by American School Publishing Corp., 470 Fourth Ave., N. Y. 16, N. Y. Controlled distribution gratis to school and college authorities and architects who do a prescribed volume of school work. To others, standing order, $1.75 per copy; single copies, $2.50. 8½ x 11¼ inches. 370pp. Articles, illustrations, school equipment and supplies catalogs. Indexed.

Always worthwhile for the architect interested in school design, *American School and University* is this year, in its fifteenth edition, a "must." It is a comprehensive volume, crammed with theory, fact, and practical means of developing the one and exploiting the other. The reader will doubtless concur in many of the points of view expressed and disagree with others, as did this reviewer. But there is no denying the experience of the many contributors to the volume. They know their stuff; if some of them are so imbued with their subject that they seem at times blinded to other points of view than their own, let us blame our national tendency to specialize, to limit our individual experience to the narrow front on which we forge ahead.

A few years ago educators were prone to speak—and write—a jargon of their own. *They* knew what it meant, and so did the initiated architects. Volumes of the yearbook then current reflected the tendency. It must have been a tremendous handicap in getting ideas across to the English-speaking populations of school districts, who, in the long run, paid the bills and furnished the market. This is to say nothing of the disadvantages to a democracy of a schism between the common speech of the rank and file of our populace and the utterances of those whose mission it is to feed us what culture we can assimilate.

The contents are divided as usual into categories; a section on theory and planning (called, this year, "Schools for Tomorrow"); one on operation and maintenance; a list of architects who have done much school work; a portion on landscaping; others on physical education, and on the various parts of school buildings; and a most complete index. Contributors include professional educators, school authorities, architects, and the Acting Director of the U. S. Golf Association Green Section.

That's not as farfetched a source for a contribution as one might imagine. Not only does the Acting Director of the Green Section know how to design and maintain severely misused turf, which is always a school headache. It is an instance also, perhaps extreme, of willingness on the part of editors and contributors to recognize the advisability of considering the school as a part of a much larger community than is contained in its own four walls, to admit that people outside the chosen few have contributions for them. (They—those professionally interested in education—have said as much for years, though they have often been unintelligible to us laymen.)

Another, more cogent, example is to be found in N. L. Engelhardt's opening article. Dr. Engelhardt, famous as a school consultant, author of numberless books on school design, and now Associate Superintendant of Schools, New York City, has long advocated closer integration of the school plant with the life and needs of the entire community it serves. He has, in the past, appeared to some to have an ax to grind, as if the salvation of his livelihood and profession depended on the erection of ever-larger, ever-more-complex school buildings and systems. The impression, we are sure, would be found to be unjustified if the protective wall of verbiage were pierced. Perhaps the traditional position of the teacher in American society forced him, and others, into such a mold. But events are changing our attitude toward education and educators; and Dr. Englehardt has seen fit to step outside the school and look at it speculatively. The result—though it starts with a truism about the present war bringing about changes in thinking habits, which we hope won't scare off readers—is indeed stimulating.

He pays tribute to the National Resources Planning Board in paragraphs evidently written before that agency fell prey to politicians; he speaks of city planning and of the origins of our tremendous American industrial urban growth. He recognizes that problems of social welfare and education merge, although he states that the war is responsible for blending them—a pronouncement to which thoughtful people may take violent exception.

The architects—with some exceptions, of course—don't do quite as well as Dr. Engelhardt. One climbs aboard the educator's bandwagon saying "The Community Will Use Tomorrow's School," and categorically lists the parts of the school which he asserts the community will use. The impression is received that the somewhat intangible community had better, or else—! Another takes for granted the status quo of population trends (flight from decaying urban cores to suburbs that are obsolescent when they start) instead of taking time to think up ways to design schools so the urban cores won't decay. On the other hand, one architect has guts enough to ask: "Do we really want good school buildings?" Another, in collaboration with the Museum of Modern Art's Curator of Architecture, investigates past and current school design from the pupils' point of view; and after all, schools *are* for children.

If this review picks flaws, the reader is urged to believe that the practice arises from a measure of disappointment that what really is, on the whole, an excellent work, should also be the vehicle—and one with some pretensions to authority—for some unreason. The reader had better get a copy for himself.

Blue-Print Reading

By D. E. Hobart. Published by Harper & Bros., 49 East 33 St., New York 16, N. Y. 8½"x11" page size, illustrated. $1.00.

A revised and expanded edition of this book has come out carrying the added topics of dimensioning, scale of drawings, threads and fasteners, shop blue-prints, in addition to the continued inclusion of many former subjects.

Periodicals

The periodical reviews were written by Margaret Greenough King.

England

THE ARCHITECT'S JOURNAL (May 6, June 10, 17, 24, July 1, 8, 15, 22, August 5 Issues). Concrete receives attention in an article on pre-stressed concrete which allows the use of wire of high tensile strength as reinforcements, thus cutting down the amount of steel used usually in the rod system. Also, a hut of non-reinforced concrete by use of an inner lining of a jute fabric is pictured. The concrete is pre-site moulded. Two bridges with uncovered concrete finish from Sweden and Switzerland are exciting in design.
Information Sheet number 895 deals with Building Boards and a school at Rowley Regis by J. Blackburn is highly commendable in plan and elevations. Astragal outlines the Town and Country Bill, and terms it too cautious.
(June 10 Issue). Astragal comments upon the LRRC plan for London as apt to arouse uproar among tradesmen to whom

There's a NEW "JEEP" in the military field!

THIS ALL-PURPOSE BUILDING OF STRIP STEEL

NAVY DEPARTMENT

JULY 4, 1943

IMMEDIATE RELEASE
PRESS AND RADIO

LIGHT GAUGE STEEL BUILDINGS FOR ADVANCED BASES SERVE SCORES OF USES

Many hundreds of galvanized steel, semi-circular utility buildings, each 40 feet wide by 100 feet long and looking like a big brother to the Quonset hut, the Navy's standard housing unit for advanced bases, are going up at scores of points in foreign theaters of war.

There, these buildings serve a multiplicity of uses. They are used for storing everything from machinery to food. Used as recreation buildings, they seat 600 men each. Almost every type of machine shop or repair operation for advanced bases can be accommodated within these units. They are so varied in their usefulness that they are similar in the building field to what the "jeep" is to the land forces.

Yet these structures can be put up in about 300 man hours each, exclusive of the time taken laying a concrete floor. The arched ribs are made of strip steel. * * * The ribs are manufactured in sections, can be laid on the ground, and bolted together. Except for raising the first couple of ribs, it is unnecessary to have a scaffolding, and heavy lifting equipment is completely avoided. The construction crew can raise these ribs, once they are bolted together, by merely pulling them into place with a rope. The corrugated steel cover is painted an appropriate camouflage color before shipment.

These units, which weigh some 25,000 pounds apiece, can be packed conveniently in crates occupying only 369 cubic feet. The crating takes only a minimum of space and is designed for quick handling on and off ships. The utility buildings fulfill needs met by nothing else because of their portability, cheapness, and wide utility.

* * * *

Even before America entered the war, Stran-Steel was applying the full measure of its research facilities, design experience and fabricating knowledge to the development of better military buildings. Today the inherent strength and light weight of strip steel framing have been utilized to best advantage, effecting economies both in the frame itself and in the collateral materials required. Many thousand cubic feet of shipping space—many thousand tons of shipping weight—have been released for other war equipment through these savings.

As the largest supplier of huts and military buildings for naval bases, Stran-Steel has acquired irreplaceable experience in design, coordination and supply. This experience is at the service of the armed forces.

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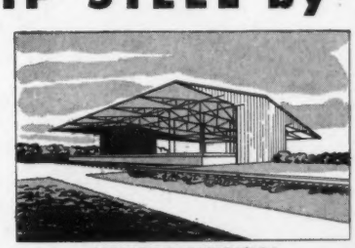
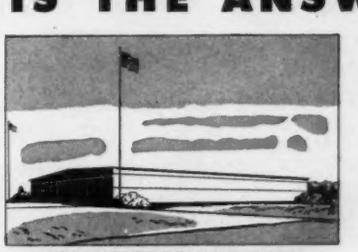


HANGAR BUILDINGS

THE FAMOUS NAVY "QUONSET" HUT



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DESIGNER AND FABRICATOR OF STRIP STEEL MILITARY BUILDINGS

a busy, over-crowded, traffic-full street is most beneficial. The plan itself is laid out more clearly in diagram and description here than in any other current publication.

(June 17 Issue). Concerned over inflation, Astragal runs to humor this week to urge attention to this factor in the future security of man. Schools such as that at Littlehampton by C. G. Stillman give all of us a breath of relief from the horrors of the Royal Academy type of architecture published recently. This one is on a par with some of the excellent recent work in California.

The first report of a new Committee for the Industrial and Scientific Provision of Housing suggests formation of another organization for co-ordination of production. The number of committees seems to be getting as out of hand as do our "alphabet agencies."

(June 24 Issue). J. B. Priestley, author and now broadcaster, addresses the Architectural Association on *Urban Britain After the War*. He feels that many planning programs are premature because there is not as yet a definite political, social, and economic background for basis.
Astragal rebukes planners for enormous talk and accomplishment so slow that returning men will have no homes in which to live. This reluctance to set themselves down in buildings is understandable in Britain and here—so many conditions of futurity must be considered. He also commends the timber construction developments as seen in the Great Lakes Training Station by Skidmore, Owings and Merrill. More on this subject makes a long article which is covered by pictures. Herbert Stevens' factory roof supported by air is illustrated.

(July 1 Issue). Discussed fully in an earlier issue the matter of the failure to execute the direly needed 3,000 agricultural cottages occurs again here. MOW has stepped in to speed work. Continuous structure, very common in America, not so in England, is argued for here and is supported by actual structural figures.
The agricultural cottages in plan and elevation are anything but good planning, in fact are deplorable for so large a scheme. Herbert Read defends industrial design by saying that rational and functional thinking are not the reality, that the response of the senses is life. No modern will argue that with him but will counter that things of the senses derive from good examples of the former and not from applied decoration.

(July 8 Issue). Centralization of all planning is again urged. Astragal cleans a closet and finds some Swedish match boxes to be good industrial design. The editors spend a day at MOW offices and learn of its large jurisdiction over building. The discussion of the use of *Continuous Construction* is continued in this issue.

(July 15 Issue). Lord Esher feels that Britain at large is far ahead of the powers at Whitehall in its comprehension of planning needs, but that Whitehall is so confused by its eye fixed on the voters that it is paralyzed. The London County Plan of J. H. Forshaw and Professor Abercrombie is covered approvingly in this issue though it lacks the coherence of the MARS plan (covered earlier). The Information Sheet is a continuation of data on Building Boards.

(July 22 Issue). The LCC plan covered in the last issue has been accepted as workable and asks for funds for development. As always the indefinite planning program of England is causing delay. We are suddenly shocked to find that with the many plans submitted for London, the City itself has a plan which is "intricate and detailed" and more capable of being the actual scheme used. Those in control feel it unwise to divulge the plan and it looks as if it might be a hoodwink proposition with politicians hustling their own schemes

(Continued on page 92)

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Toward a Stronger Profession

Despite the difficulties that have been met by many architects in finding ways to apply their professional talents toward winning the war, we continue to believe that architectural men, on the whole, have made and are continuing to make a heavy contribution to this end. In order to support this belief by facts, we set out a couple of months ago to collect some rough statistics from AIA Chapter and State Association Secretaries concerning the war activities of their members. So far, we have had full responses from twenty-six of these groups and have been assured by six others that figures will be forthcoming soon. We expect that most of the fifty or more groups not yet heard from will be represented in time so that we may make a complete summary and report by the end of this year.

The evidence so far collected indicates that the totals will be quite impressive. Even though conditions vary in different parts of the country, not a single group that has reported is without representation both in the armed forces and among those responsible for the design of war projects. Several hundred architects are named as belonging to either the Army or the Navy and Marine Corps with ranks ranging from buck private to Brigadier General, from ordinary seaman to Commander. The national totals must reach at least into four figures—a respectable percentage of a comparatively small profession.

While we are not at liberty to divulge the nature, size, and location of war projects that have been designed by architects in civilian practice, we already have indications that such projects run in their totals into hundreds of millions of dollars, perhaps billions. These include not only army and navy establishments, but war industrial plants, housing, and other things clearly necessary for the conduct of total war. While it is true that in many cases these works were done in collaboration with engineers, it is nevertheless also true that without the participation of the architect they could not have been so well planned and would probably not serve their purposes so effectively.

Other hundreds of architectural men have been serving technically in various government bureaus—federal, state, and local. When the record is complete, we believe it will demonstrate beyond question that the architect has a vital role to play in war as well as in peace. All this is cited as encouragement to those among us who have felt frustrated and who have inclined to develop a sense of inferiority toward our fellow professionals, the engineers. To these we can say with assurance that the architects have nothing to be ashamed of in the performance of their duty to their nation as specially equipped citizens, competent to help in emergency as well as to serve in what we like to think of as normal times.

Out of all these war activities, which have tended to disrupt the even course of architectural practice and the organization of the profession, we sense the growth of a feeling of increased solidarity among architectural men. At least there is a greater consciousness of the oneness of the constructive architectural purpose and a realization that it matters not so much what relative rank is held in the army of architecture provided the man at work is doing his job well. Many architects have given up their own individual practice to work in some of the large organizations as draftsmen and designers. This is making it clearer than ever that the whole profession, as a living and progressive body, comprises not only the independent architects but all those fellow workers of the drafting room and even the very youngest men who are still studying in the architectural schools.

We hope that somehow out of it all will come, after the war, a stronger and better American Institute of Architects, rededicated to the service of society. The Institute's Board of Directors has recently seen fit to appoint C. Julian Oberwarth of Frankfort, Kentucky, to conduct a membership drive in which the goal will be to unite the highest possible percentage of qualified architects as members of their national body. Mr. Oberwarth, when he was Regional Director of the Great Lakes District, was largely responsible for a remarkable increase in the membership of the Chapters in that area. We hope that he will have equal success in stimulating a more complete organization of the members of our profession on a national scale. We hope also that the Institute will recognize, to a greater degree than heretofore, the necessity of including the younger men as members and associates, with a voice in its affairs.

We will need, after the war, all the strength the architectural profession can muster to help solve the stupendous problems of reconversion and reconstruction. It will be well if all its elements can be firmly organized with a common aim, to exert their influence towards creating a future environment for our people worthy of a great nation. —K.R.

Photos by Heinrich-Blessing

Present Recreation Room, Rugen School, is so designed that when the school is expanded it can become a community living room, serving as a library, social room, and recreation center; it will be the lobby for the auditorium and recreation center. Since this photograph was taken it has become necessary to house two classes in it—an indication of the need for expansion. The planting box at left of the fireplace is designed for soilless gardening; pupils plan to grow vines in it, as indicated in the sketch at the right, making an educational project serve as wall decoration.

Rugen School, Glenview, Ill.

Perkins, Wheeler and Will, Architects

Many of the desires of advanced educators are realized in the Rugen School: extremely high level natural lighting, bilateral and glare free; classrooms with auxiliary units designed for efficient but unobtrusive supervision; a one-story layout, which helps to reduce first costs; carefully thought-out heating and ventilating; gay use of color; freedom for class seating arrangements—to mention a few.

The school, completed recently, is a war project, though not connected directly with a war housing development. As the first page of the specifications, of which part is reproduced below, tells, the existing Horace Mann School in Glenview had to be demolished to make way for a Naval Air Training Station. Somewhat previously, a school survey made for the local Board of Education had indicated the advisability of consolidating districts and providing new facilities. This school is part of the long range plan; the war, which in so many cases has prevented the implementation of such planning, here provided a stimulus for realizing it.

NEW RUGEN ELEMENTARY SCHOOL

BOARD OF EDUCATION DISTRICT, 34

GLENVIEW ILLINOIS

Perkins, Wheeler and Will
Architects

Merchandise Mart
Chicago Illinois

SPECIFICATIONS FOR CONSTRUCTION

IN GENERAL

1. WORK COVERED.
These specifications and accompanying Drawings are intended to describe and illustrate all material, labor and equipment necessary to complete construction under a General Contract of a new building on the east side of Shermer Road south of Glenview Road, for the Board of Education of Consolidated District 34, Glenview, Illinois.

2. PRIORITIES.
The Board of Education has applied for preference rating on this project. Since project is made necessary to vacate property for a Naval Air Training field it is probable that adequate rating will be available. The building has been designed for maximum use of salvaged materials and minimum requirements of new critical materials. Contractors are urged to plan all work to conserve on all material whether temporarily or permanently installed in project.

3. SCHEDULE.
It is imperative that the building operations on this project be completed in the least possible time. The Navy has required immediate clearance of the airport property and the Board must provide housing for its classes as early as possible. Successful bidder will be required to prepare schedule of construction as guide to the Board in planning temporary accommodations.

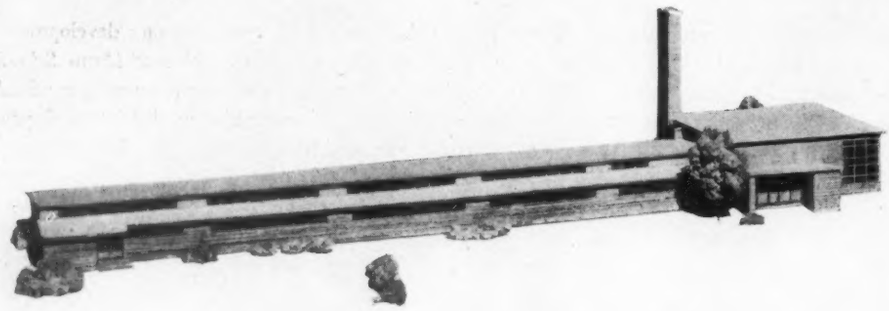
4. PREPARATION OF BIDS.
...sel. examine all drawings relating to this work, care-

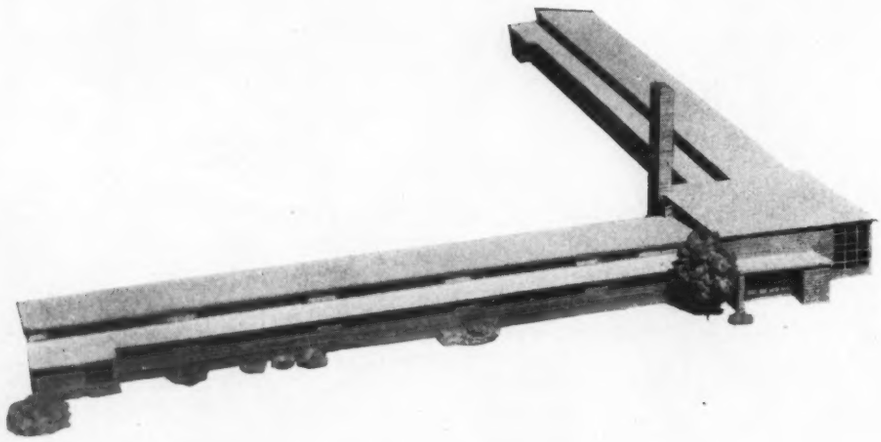
Glenview is an up-and-coming suburban residential community, not as yet directly affected by any great influx of war workers. In this sense it is more typical of normal conditions in American municipalities than Portsmouth, N. H., Vancouver, Oregon, or Norfolk, Va., or any of the other cities and towns which have grown so tremendously in the course of the war boom. Those communities have had to have schools too; but in most cases pressure of time, shortages of materials, and uncertainty as to the future have caused erection of either replicas of the numberless inadequate monumental schools of the past, or frankly temporary buildings, some good, some bad.

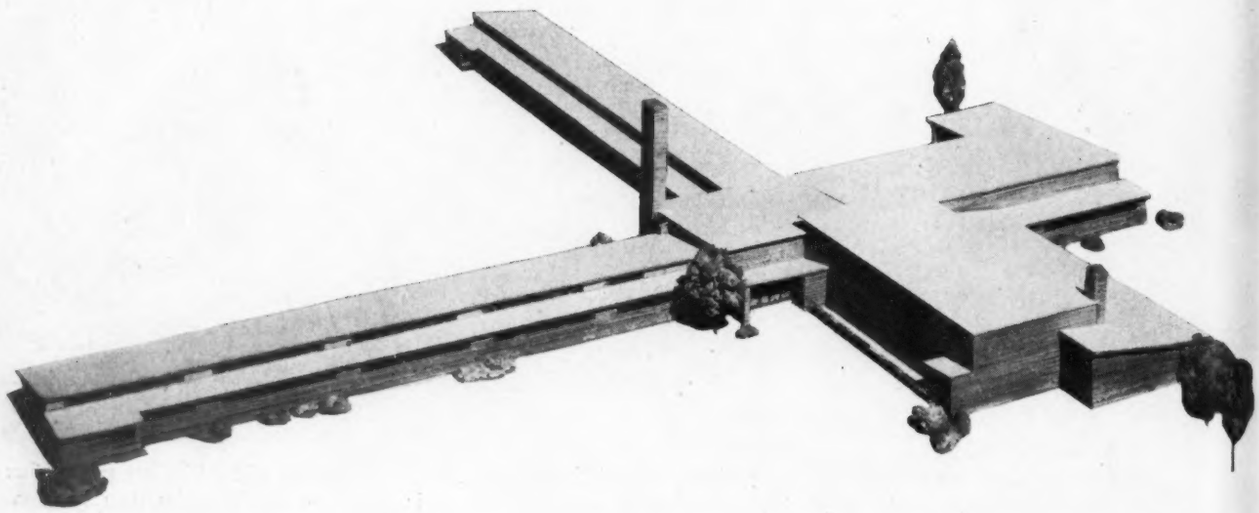
That Rugen is neither an inadequate Colonial structure with a lantern atop it, nor a transitory shed, is due in great part to the courage of the Glenview Board of Education. They had a program, an urgent reason for building now, and they wanted a school which would not become obsolete for at least a few years. The architects have asked that credit be given the Board, of which Mr. Harold Basquin is President, and Mr. H. Evert Kincaid (also Acting Director, Chicago Plan Commission) was Chairman of the Building Committee.

The four photographs of models on this and the facing pages show stages through which the Rugen School is expected to go. As experience accumulates, details of design, or even the complete scheme, are subject to modification; but the groundwork has thus been laid for a development which is reasonable in light of Glenview's predictable future.

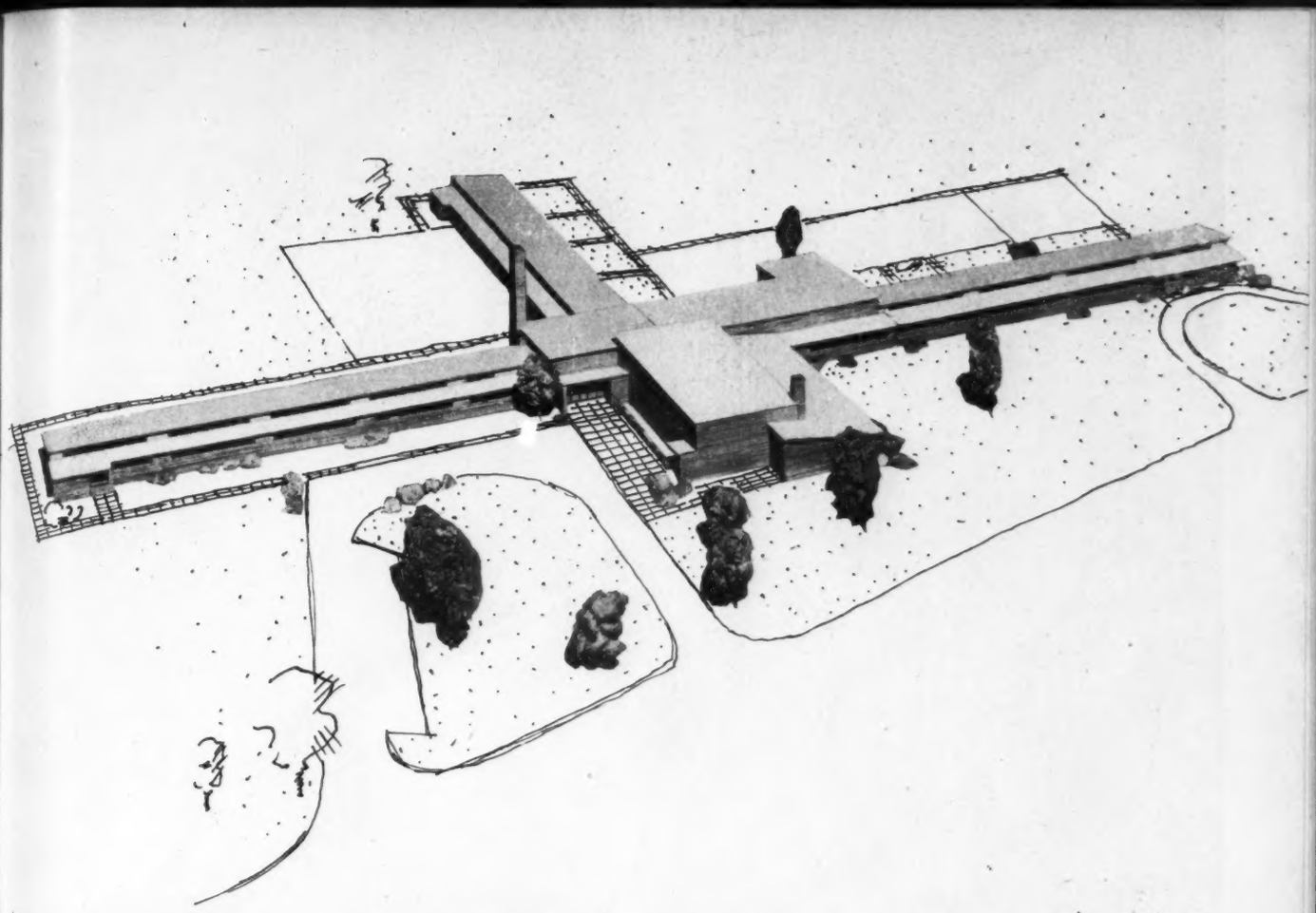
As the plan on page 38 shows, each wing is eventually to house a separate age-group, while the common facilities—which are also for community use—are grouped at the center. This means that the minor cruelties which older children, often unwittingly, inflict on younger have fewer opportunities to develop. One of the worst effects of the war upon the school is the overcrowding, the mixing of age groups, which occurs when all classes must be accommodated in the one wing.



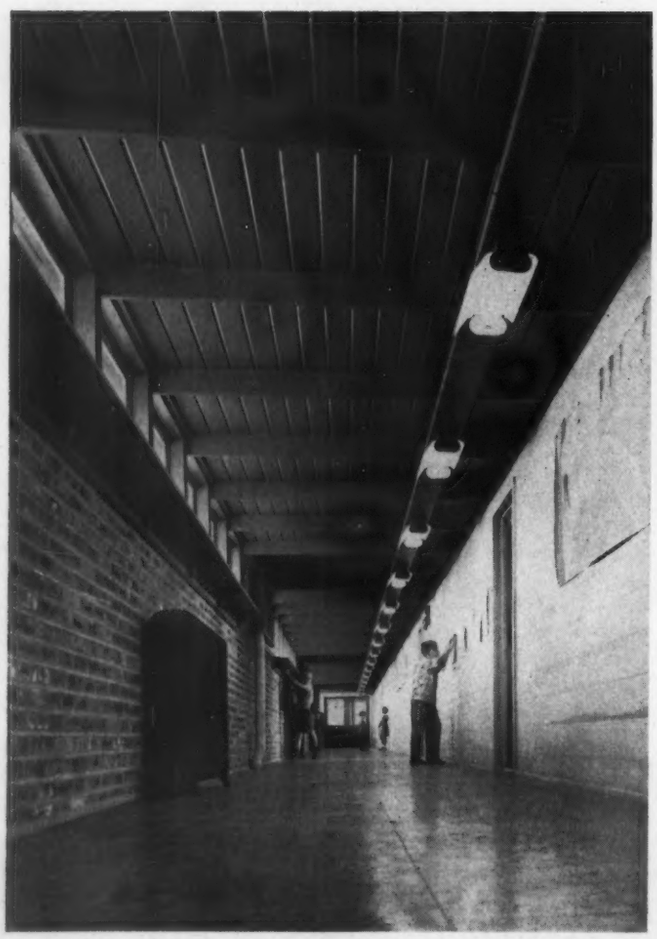




It seems impossible that costs per square foot of a building so sprawled out could compete favorably with those of the square box form which is ordinarily considered most economical; yet the table of comparative costs on a previous page shows this to be the case. Several factors combine to produce this result. In a one-story building in which each classroom has an exit leading directly outdoors, combustible materials can be safely used. Also, elimination of fireproof stair halls greatly reduces waste space and wipes out a costly type of construction. The lighting was originally to have been continuous Zeon tubing, but the war made fluorescent fixtures necessary—an entirely satisfactory (and permanent) change which cost much less than the original estimate for Zeon. The heating system, including a boiler of capacity sufficient for the ultimate building, cost substantially less than the estimated $15,000. Lockers, which were omitted from the corridor, have been replaced by a hat shelf and hooks at a cost of $32 for the complete installation; if and when lockers are added, square foot costs will rise slightly.



The low entrance, at right in the photograph below, has its roof slanted back away from the steps. This was done because gutters could not be obtained, and the pitch prevents rain, accumulated snow, or icicles from dropping down the necks of those entering the school.



All the material that could be used from the demolished Horace Mann School was incorporated in the Rugen School. The brick is new; it is reddish brown in color, and is left unsurfaced on the interiors. Asphalt tile, slightly darker, covers the concrete floors. Interior partitions are wood, left nearly a natural color; they are intended for use as tacking space for exhibits. When, in several years' time, the tack holes become conspicuous, the wall can be resurfaced. It should be noted that when this building was designed lumber was plentiful, and a design to conserve critical materials made use of it instead of steel.

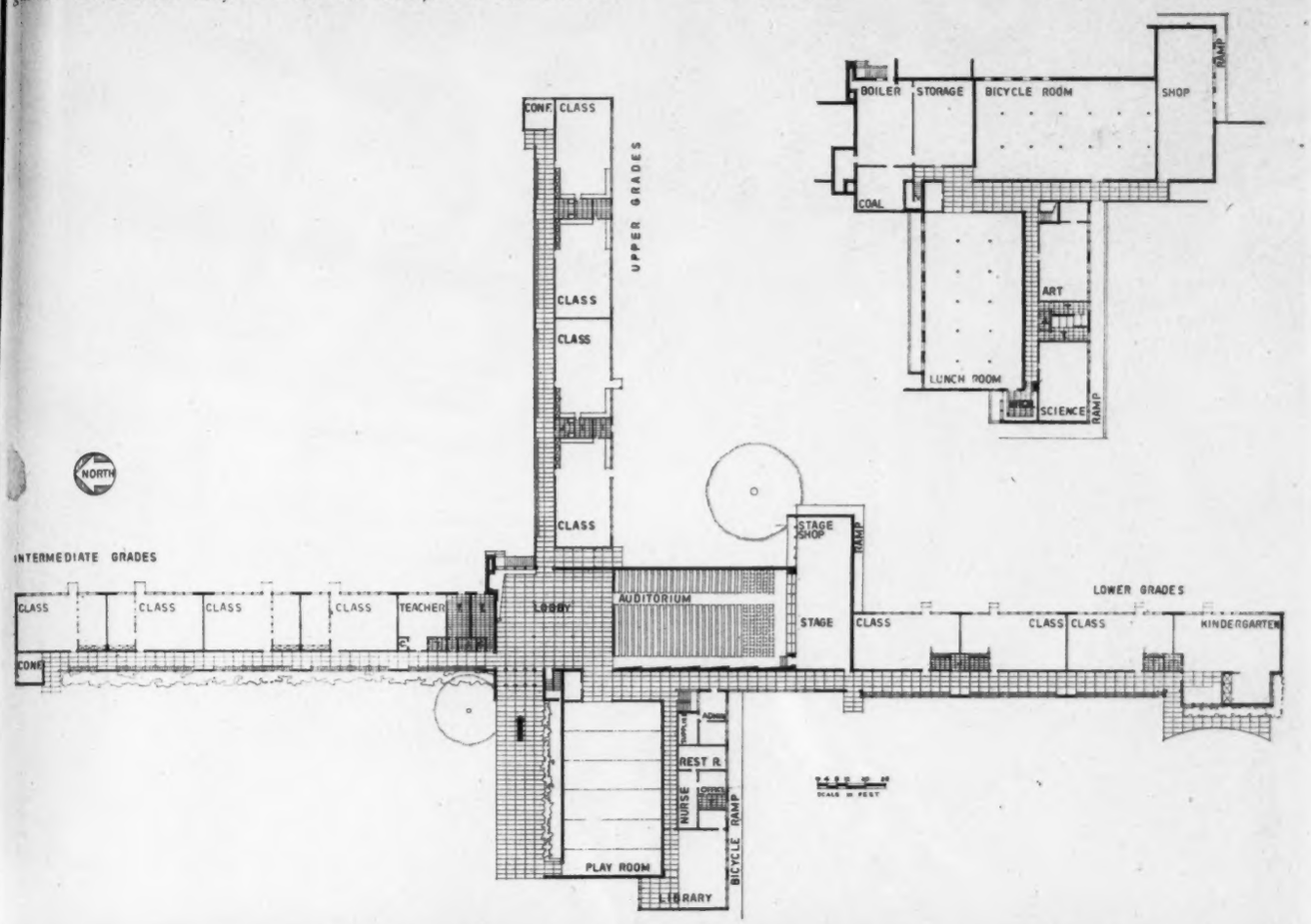
The material situation was, of course, a matter of concern to the architects. But they did not permit it to become an insurmountable hurdle. The school had to be built; it had to be good, for it was part of a well-organized permanent scheme. So the necessity for using wood became merely another factor to be used to advantage in design, along with such requisites as planning for the minimum which could house a growing community's needs, providing for later expansion, and fitting the building to the School Board's purse. In this connection, the following tabulation is of interest. The architects believe strongly that cost per usable square foot is the only fair method of comparison, because area, not cubage, is significant in determining utility.

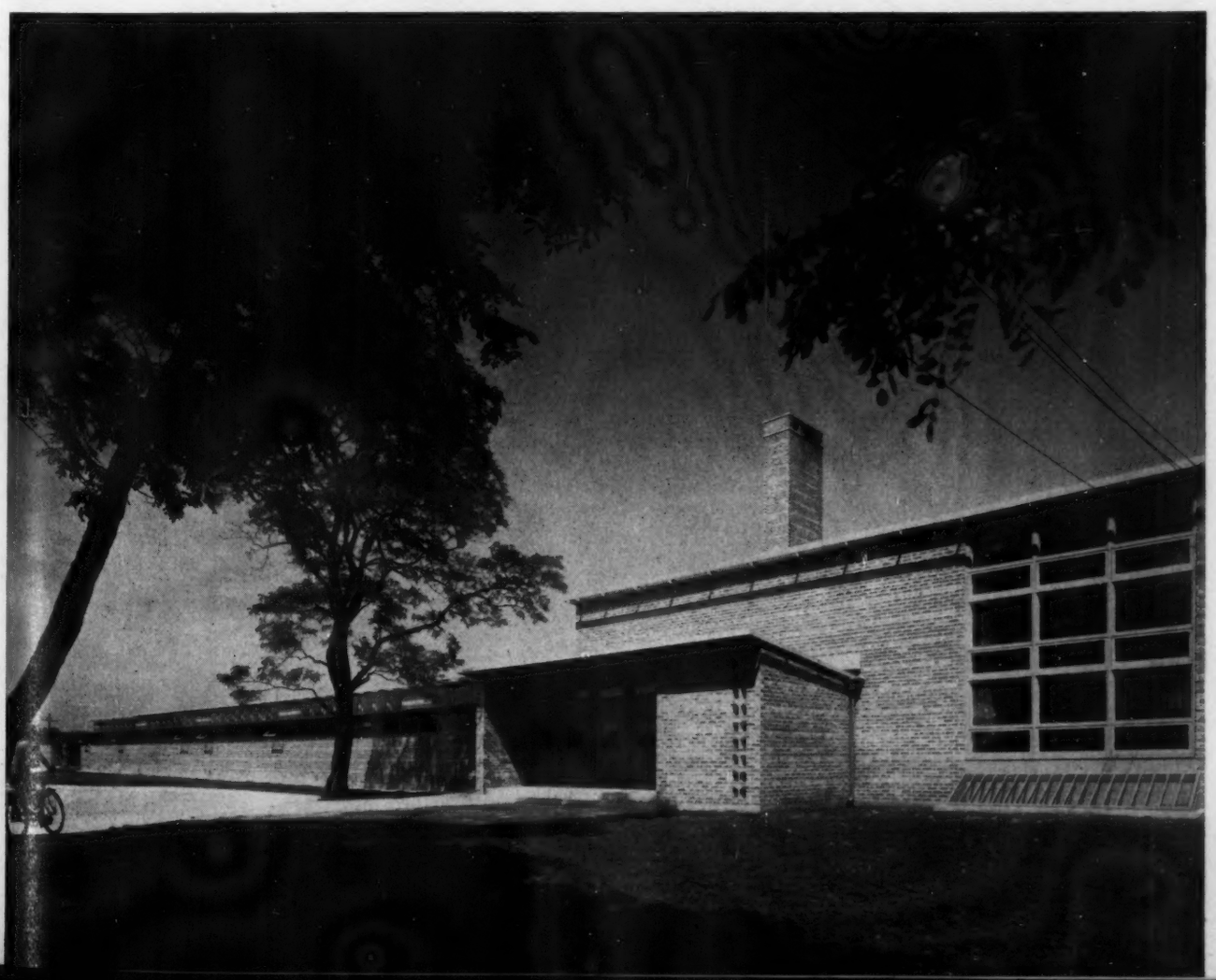
COST COMPARISON—RECENT SCHOOLS IN CHICAGO AREA

School	Construction	Date and Cost	Cu. Ft.	Cost Cu. Ft.	Net Useful Sq. Ft.	Cost per Sq. Ft. Usable
A	1 story Fireproof	1939 $287,000	671,639	$0.4275	27,452	$10.49
B	3 story Fireproof Air Cond.	1937 165,000	301,000	.548	13,732	12.00
C	2 story Fireproof	1936 465,000	1,416,235	.328	45,676	10.17
Rugen	**1 story Brick, frame**	**1942 49,500**	**132,918**	**.372**	**7,043**	**6.65**

Corridor, shown at left, has space for pupils' exhibits; it is also a covered passage (open corridors were impossible due to climate); and will serve on occasion as the town's art gallery.

Plan for Rugen School, below, shows present scheme for complete structure. Only the wing labeled "Intermediate" is built now; addition for upper grades is likely in near future. The present Recreation Room is here called the Lobby. On the basis of experience gained here, details may be somewhat modified in additions.



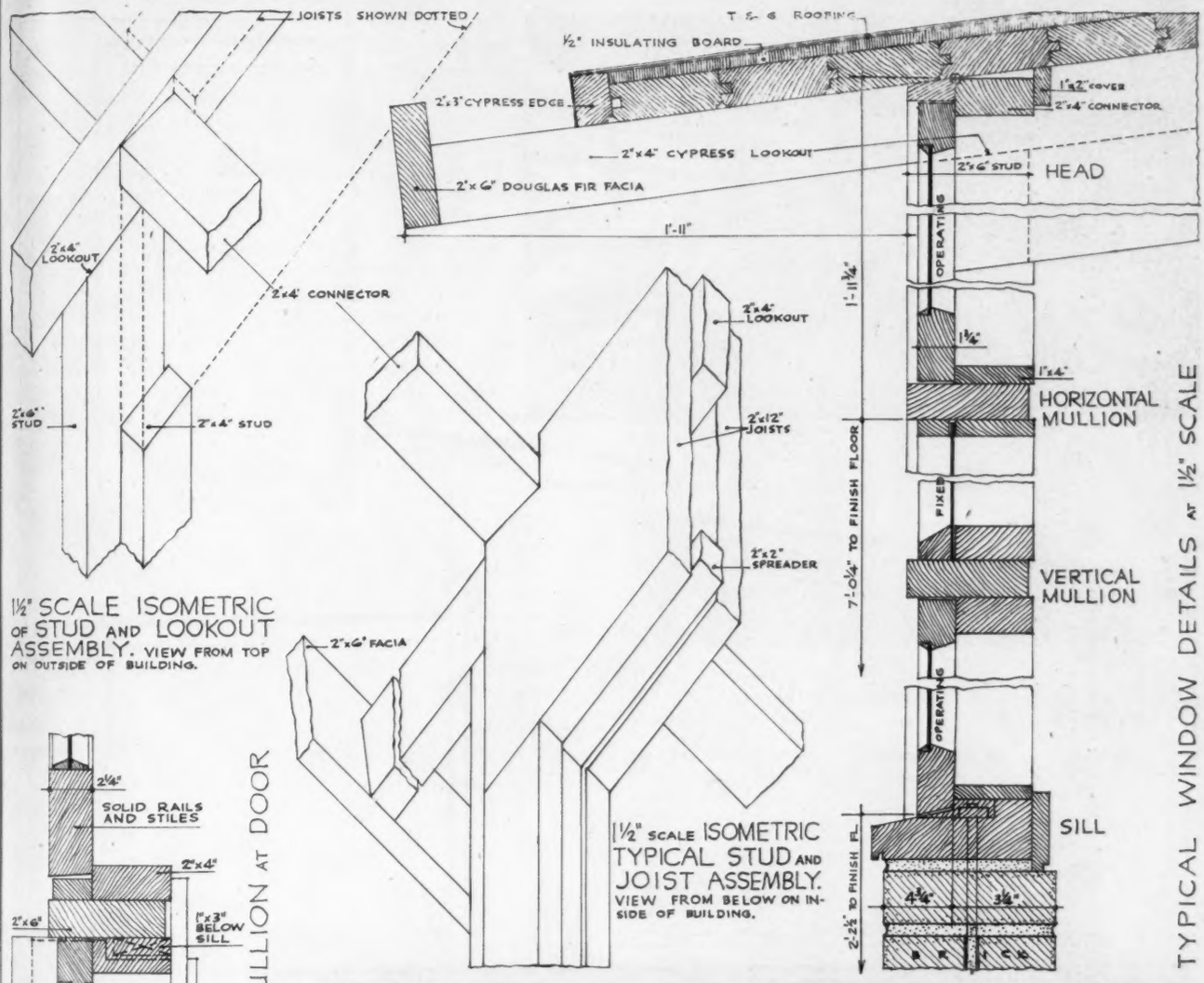


Interior and exterior of the Recreation Room illustrate several ideas which are used in one form or another throughout the school. Ceiling, painted a clear yellow-white for reflectivity, is visually "carried through" the windows under the eaves. Windows extend up between ceiling beams to admit maximum light. Curtains have to terminate at top transom bar; facia board on ends of rafter outriggers not only covers the gutterless eaves edge, but also acts as sunshade for the uncurtained top of the window when the sun is low in the morning. This wing is oriented east and west. Afternoon sun hits inner side of facia, is reflected back into room.

Selected Details

Typical Classroom, Rugen School; Perkins, Wheeler and Will, Architects

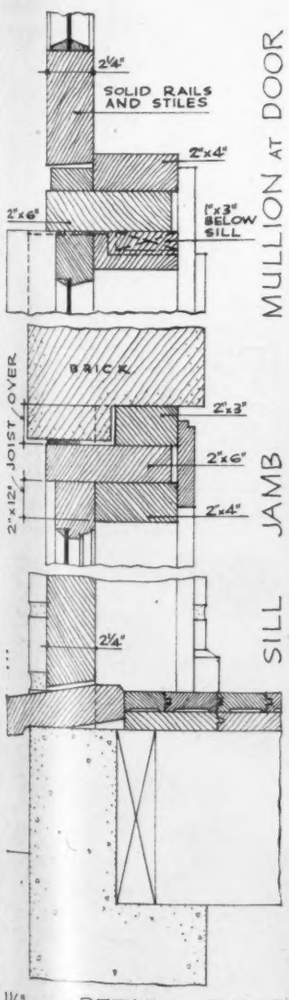
Window heads are carried up between beams, a device borrowed from Stanton and Mulvin's California schools. Color is used freely throughout. Ceilings are clear yellow-white; trim in classrooms varies, with one room red, another yellow, another blue, etc. This color appears on outside of classroom doors and under eaves.



1½" SCALE ISOMETRIC OF STUD AND LOOKOUT ASSEMBLY. VIEW FROM TOP ON OUTSIDE OF BUILDING.

1½" SCALE ISOMETRIC TYPICAL STUD AND JOIST ASSEMBLY. VIEW FROM BELOW ON INSIDE OF BUILDING.

TYPICAL WINDOW DETAILS AT 1½" SCALE

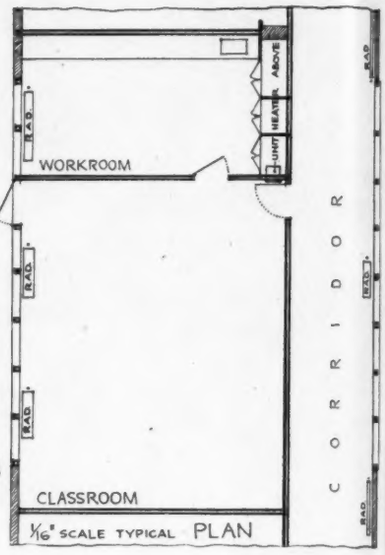


1½" SCALE DETAIL OF DOOR

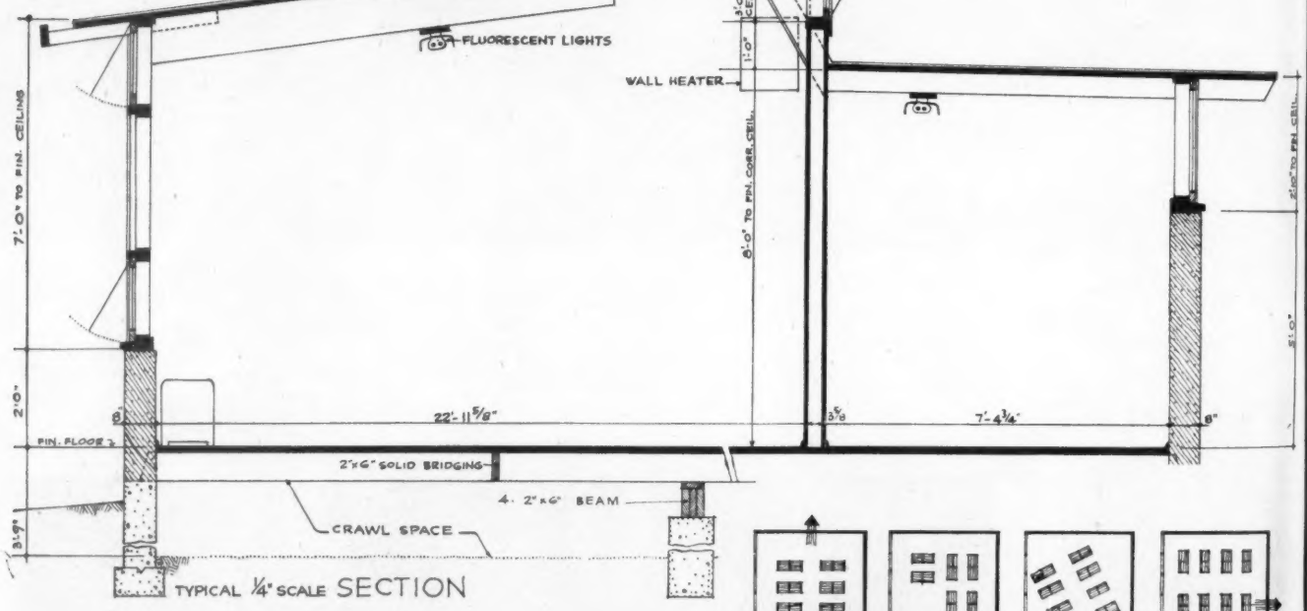
Selected Details

Typical Classroom, Rugen School; Perkins, Wheeler and Will, Architects

Typical classroom contains many ideas beyond the obvious wide expanse of glass and bilateral window arrangement. The sloping ceiling is used to advantage for heating, lighting and ventilating.



1/16" SCALE TYPICAL PLAN



TYPICAL 1/4" SCALE SECTION

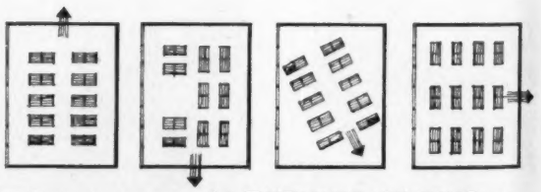
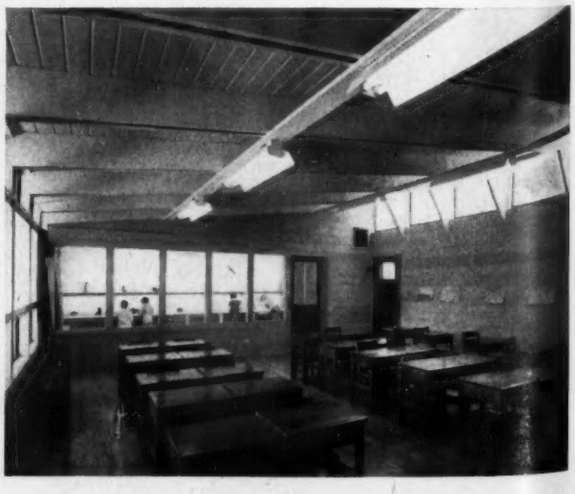


DIAGRAM OF POSSIBLE ALTERNATE SEATING SCHEMES

Natural lighting, evaluated in comparison with another good recent classroom on the facing page, is assisted by several design details. The light ceiling color is one; carrying window heads to the ceiling is another. The facia strip at the eave's edge reflects sunlight when sun is on opposite side of building and shades top areas of glass from direct sun rays. Kneebraces at high side of ceiling serve to diffuse light coming through the clerestory windows. Corridor roof is surfaced with white asbestos, which, even though it becomes gray with dirt, will still reflect more light through the clerestory than the conventional black roof.

Heating is provided by one-pipe steam radiators which do 40% of the job; industrial unit heaters built into the wall near clerestory windows supply the remainder. Roof has ½ in. of insulating board under the bonded surface, and a white top layer which aids in reflecting heat. Ventilating is aided by the law of gravity and positioning of ventilating sash, which help to induce a current of air across the room. Unit heater can also be used for ventilation.

In planning, use of movable furniture was anticipated. Partition between classroom and auxiliary classroom is glazed for supervision. In the auxiliary classroom, groups may gather to discuss or lay out projects, etc. Equipment here includes storage cabinets, workbench, and water for use in projects and for drinking.



Several factors are emphasized by the comparative light meter readings shown below. However, it should be remembered that: 1, the readings were taken in mid-August, when sun is relatively high and school is not in session; 2, later (or earlier) in the year, when school is in session, sun will be closer to horizon and hence will penetrate farther into classrooms; 3, readings were taken at sun noon. Readings in morning or afternoon would show increased sun penetration in the Rugen School because it is bilaterally lighted; in the other school, with light coming from one side only, footcandles of natural light would be lower in the afternoon. Photo at right; Lawrence B. Perkins, seated, (Perkins, Wheeler and Will) and an engineer from the Northern Illinois Power and Light Co. take meter readings, with Superintendant Hoffman in the background.

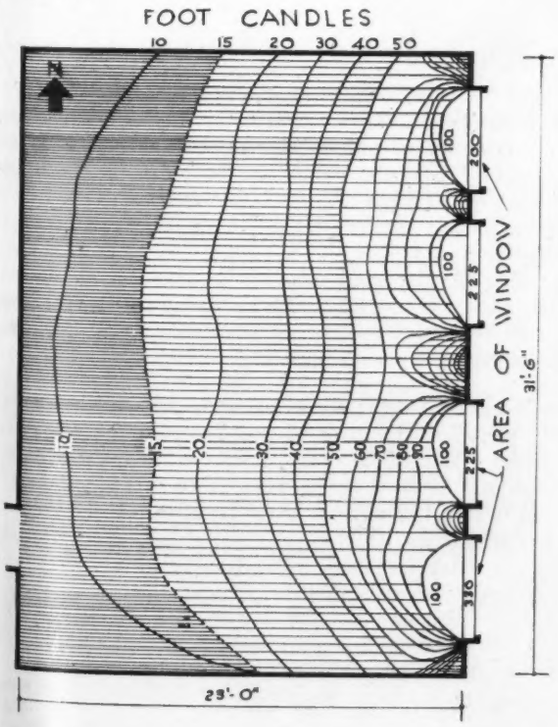
From 0 to 100 footcandles (at desk level) is considered highly satisfactory provided no spots of direct sunlight appear; 50 to 100 footcandles is an excellent range; from 15 to 50 is adequate; below 15, not really satisfactory. Faults which appear in the Rugen classroom include the somewhat darker, yet still satisfactory, areas at the corners, where solid walls are used; and the possibility that direct sunlight may enter the room at times. Note contrasting light and dark areas in other classroom. It is this contrast which produces uncomfortable glare.

DAYLIGHT CONTOURS—STANDARD CLASSROOM* (no clerestory)

Date: August 18, 1943 *Time: Sun Noon*

Heights	Window Wall
Floor to sill	2 ft. 11½ in.
Sill to head	8 ft. 0 in.
Floor to head	10 ft. 11½ in.
Head to ceiling	0 ft. 2 in.
Floor to ceiling	11 ft. 2 in.

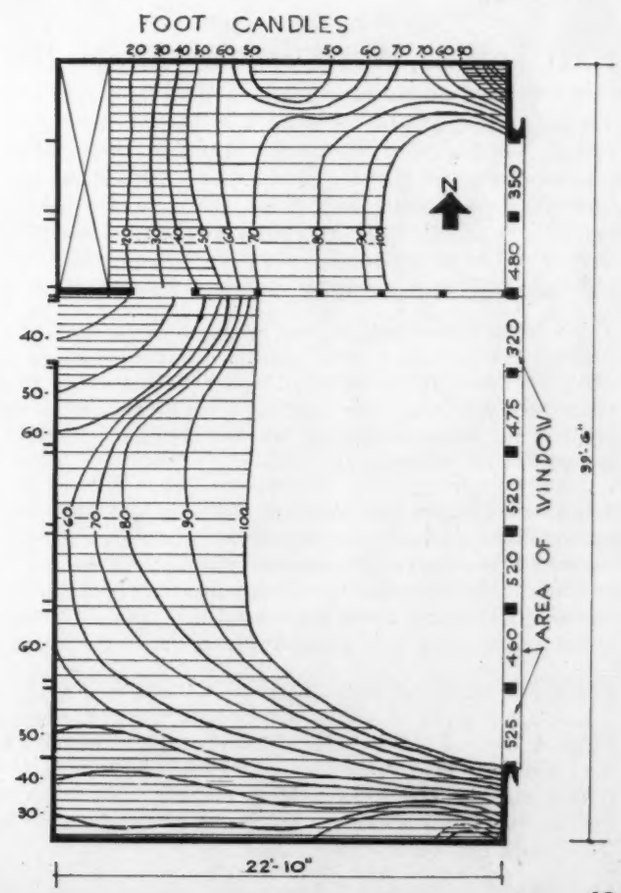
** Standard classroom in a recent school, considered excellent, in the Chicago area.*

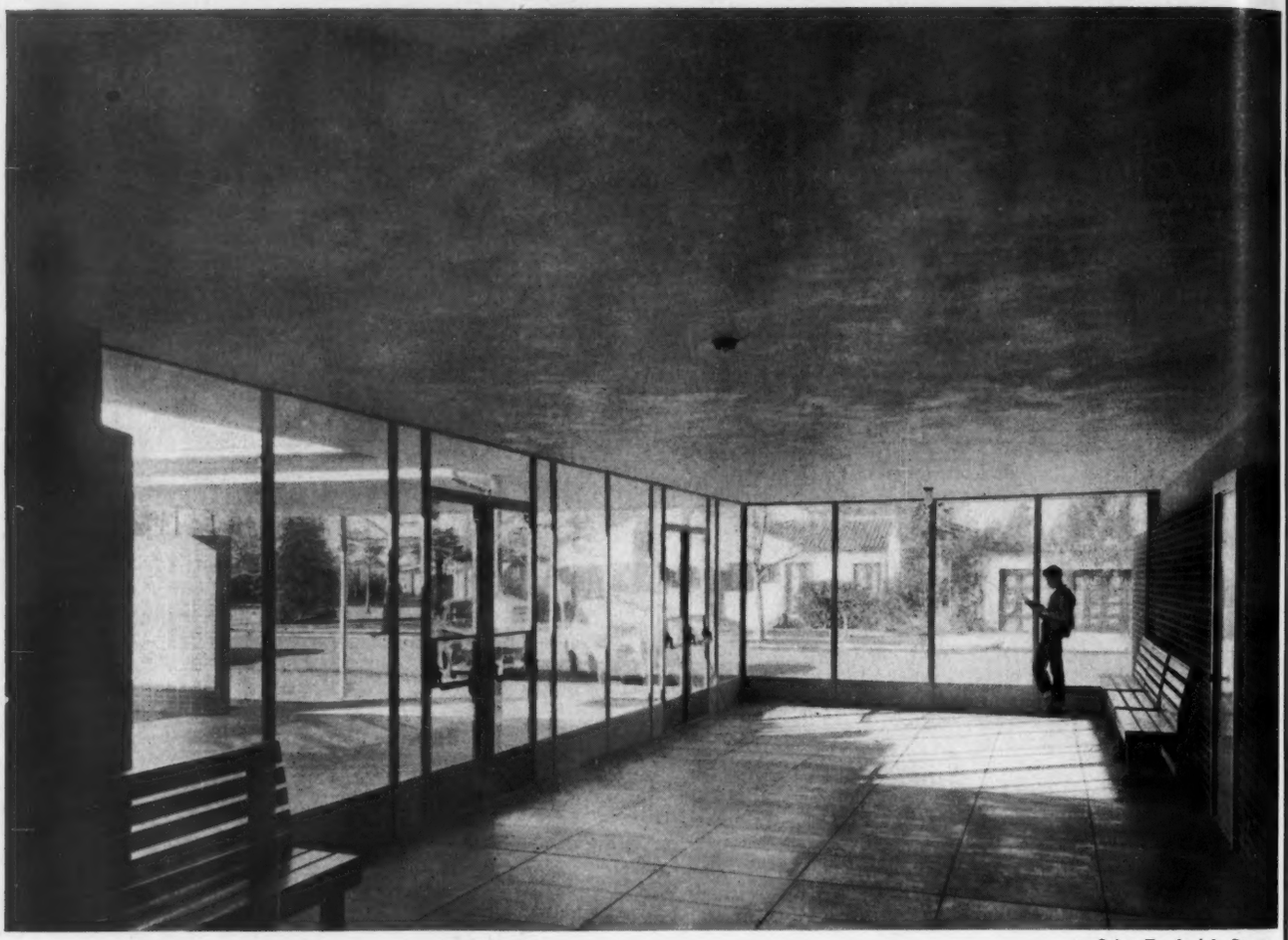


DAYLIGHT CONTOURS — RUGEN SCHOOL

Date: August 18, 1943 *Time: Sun Noon*

Heights	Window Wall	Clerestory Wall
Floor to sill	2 ft. 4 in.	9 ft. 0 in.
Sill to head	6 ft. 6 in.	2 ft. 10 in.
Floor to head	8 ft. 10 in.	11 ft. 10 in.
Head to ceiling	0 ft. 2 in.	0 ft. 2 in.
Floor to ceiling	9 ft. 0 in.	12 ft. 0 in.





John Frederick Stanton

The School Plant Re-examined

by John Lyon Reid, A.I.A.

Past Trends, War Lessons, Shape the Future School

The school, and the plant in which it exercises its function as both the learning center and the focal point of creative arts of the community, are claiming an increasing share of attention from educators, planners, and citizens. Since the entry of this country into the war much has happened which has intensified scrutiny of the school system, both as to teaching effectiveness and as to the place it is making for itself in the community.

This war has shaken to their roots all phases of the life of this country. We have been given cause to question everything to which we have grown accustomed, and to re-valuate our institutions, our habits, and our thinking, in terms not only of the needs of the present emergency but also of what we hope to be and to have after the war.

The schools have not been spared the effects of war. Many new opportunities for schools have been opened, many new points of reference have come to be established by which they are judged, and much wartime building and planning, together with new ideologies and practices, have contributed to a rapid acceleration in the growth of our concept of education.

In the field of school plant design the architect will find increased opportunities in dealing with education, one of the great factors of national life, once peace is achieved. In anticipation of these opportunities, it seems imperative to re-examine the entire field of education and school building, to consider the trends of the past, the lessons of the war and the place of both in giving shape to the post-war educational plant.

Although we have always taken pride in our free public school system, recent surveys and the War Department's recent figures do not wholly justify this pride. The latter data inform us that 28 men out of 1000 entering the armed forces do not pass the simplest of literacy tests and that a great many recent graduates of high school and college in this group are weak in the use of the English language. Of 4200 freshmen in 27 leading colleges, who were candidates for admission to the Naval Reserve Officers' Training Corps, 68% failed to pass the entrance test in arithmetical reasoning.

It can be assumed that these statistics are fair, and not unreasonably prejudiced in favor of the immediate needs of the armed forces. Most of the young Americans whose examinations form the basis for these figures have either recently been graduated from school or were in actual attendance at the time, so that the general standards of learning, ability, and health exhibited can be attributed to their schooling more than to any other factor in their lives.

All this can be taken to indicate that the country's schools are not doing their job as well as they might; and that it constitutes an indictment of the effectiveness of the educational system.

Another aspect of education that has been thrown into particularly strong relief at the present time is the relation of the school program and the school plant to the life of the community it serves.

There's not much similarity between the photograph on the opposite page and the one below. There should not be; there's 98 years between the lobby of the Exeter Union High School, Exeter, California, for which Franklin and Kump were architects, and the Plains Elementary School in Portsmouth, New Hampshire, which had no lobby but sent its pupils directly outdoors into sun, rain, or snow. The Plains School still has facilities for thirty primary pupils, but now has to accommodate 51—an example of what this war has done to schools. John Lyon Reid, author of the article, on leave from M.I.T., is a member of Ernest J. Kump Company, in California, an outgrowth of the former firm of Franklin and Kump, Architects.

FWA photo

The trend of the past ten years and more has been toward a closer integration of the curriculum of the school (and its scope) with the problems and opportunities of local communities. Many localities have a well defined plan of action to stimulate adult interest in programs of learning, of play, and of creative work fostered by the school. This development of the community school idea has been on a nation-wide scale and has had the sponsorship of many well-known educators. The adult phase of this community school program has had to contend with the inertia of custom, and with the difficulties presented by an inflexible or obsolete school plant.

The war and war construction have had much to do with an accelerated development of this school-community concept. The inertia of custom is yielding to pressures set up by wartime shifts in population and by the new demands made upon the schools by wartime needs. To these demands the answers provided by schools have fallen into line with the already established trend toward a closer school-community partnership. This partnership is likely to emerge from the war with its position solidified by the war experience.

Many new agencies and functions, born of war necessities, have legitimately made use of the machinery of the schools to carry out their work. The school house in countless instances has become the work center of draft boards, food and gas ration boards, disaster relief groups, war rehabilitation centers, nurseries for the children of mothers in defense work, clinics, training agencies for work in war industries, educational centers for men of the armed forces, and so on. But it should not be too quickly assumed that schools in peacetime will continue non-educational work because of these wartime precedents.

Our eyes are sometimes closed to the value of a school through matter-of-course acceptance. When we are deprived of the school its values are poignantly realized. This has happened to many defense workers who have wanted to move into new war housing developments where houses were completed far ahead of the schools. In such instances some have refused to move until schooling facilities could be assured.

The great wartime shift of population has posed many new problems in community living. Many, if not most, of the war workers have come to centers of war industry from distant parts, leaving behind all their former social, business, and professional contacts. The new communities built to house them are so large that they place too great a demand on community services existing in the older nearby areas, which are geared to peacetime needs. The new communities must be somewhat self-sufficient, with their own community service facilities. This aids in establishing new contacts for medical care, education and recreation, as well as shopping.

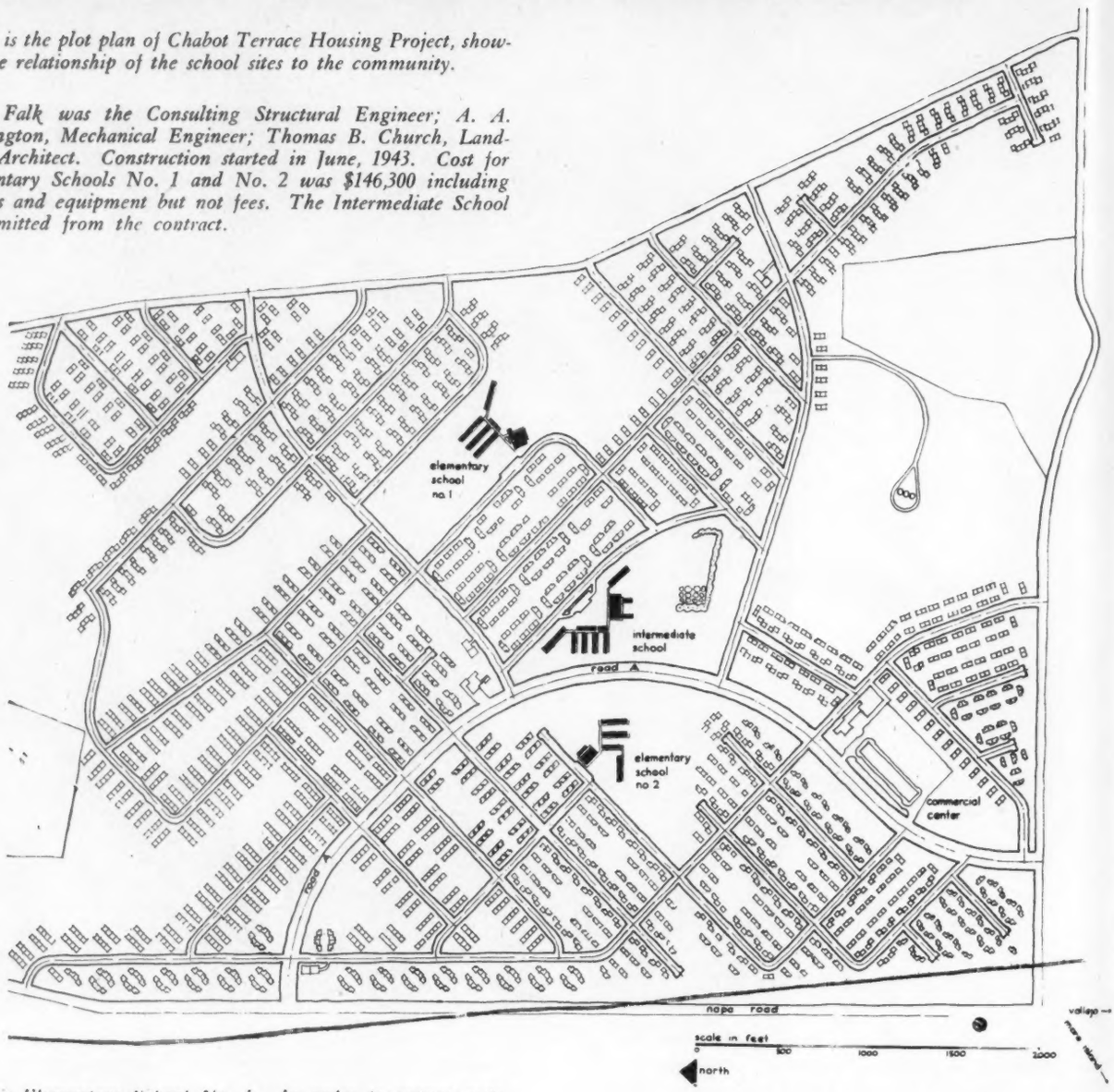
Scores of wartime cities, large and small, have sprung into being on empty land. In these new cities relative freedom is found from problems of existing traffic and use patterns, and from questions of land values. This has made it possible in planning them to seek to establish more desirable community relation-

(Continued on page 50)

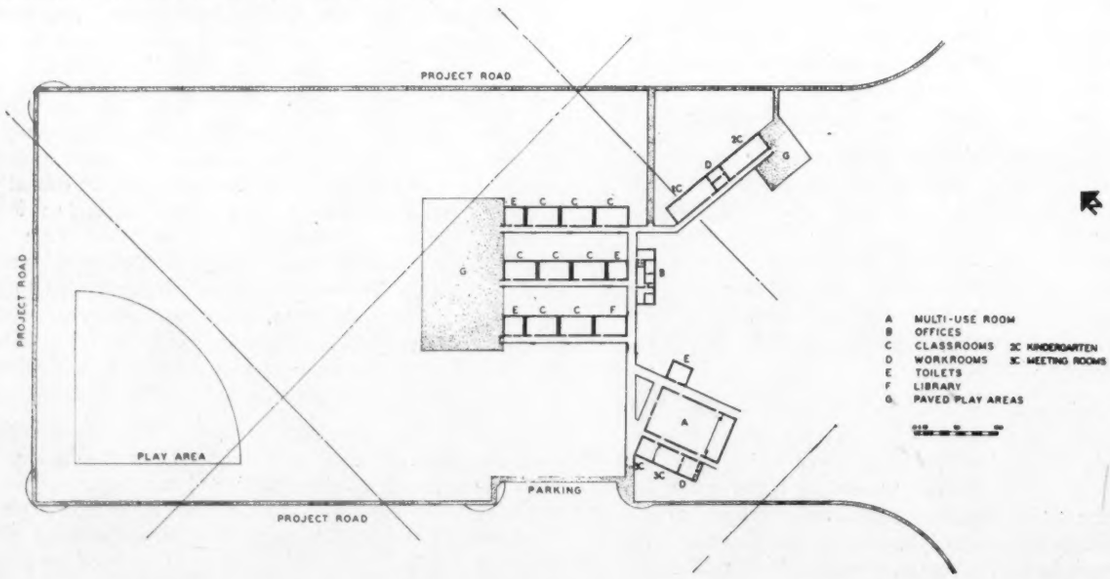
Schools, Chabot Terrace War Housing, Vallejo, Calif.
Franklin and Kump—William Wilson Wurster, Architects Associated

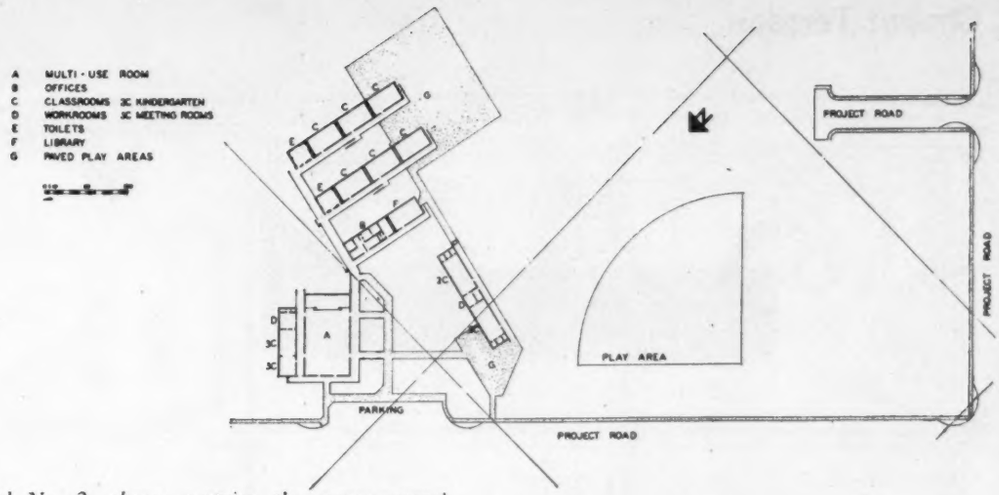
Below is the plot plan of Chabot Terrace Housing Project, showing the relationship of the school sites to the community.

Mark Falk was the Consulting Structural Engineer; A. A. Coddington, Mechanical Engineer; Thomas B. Church, Landscape Architect. Construction started in June, 1943. Cost for Elementary Schools No. 1 and No. 2 was $146,300 including utilities and equipment but not fees. The Intermediate School was omitted from the contract.

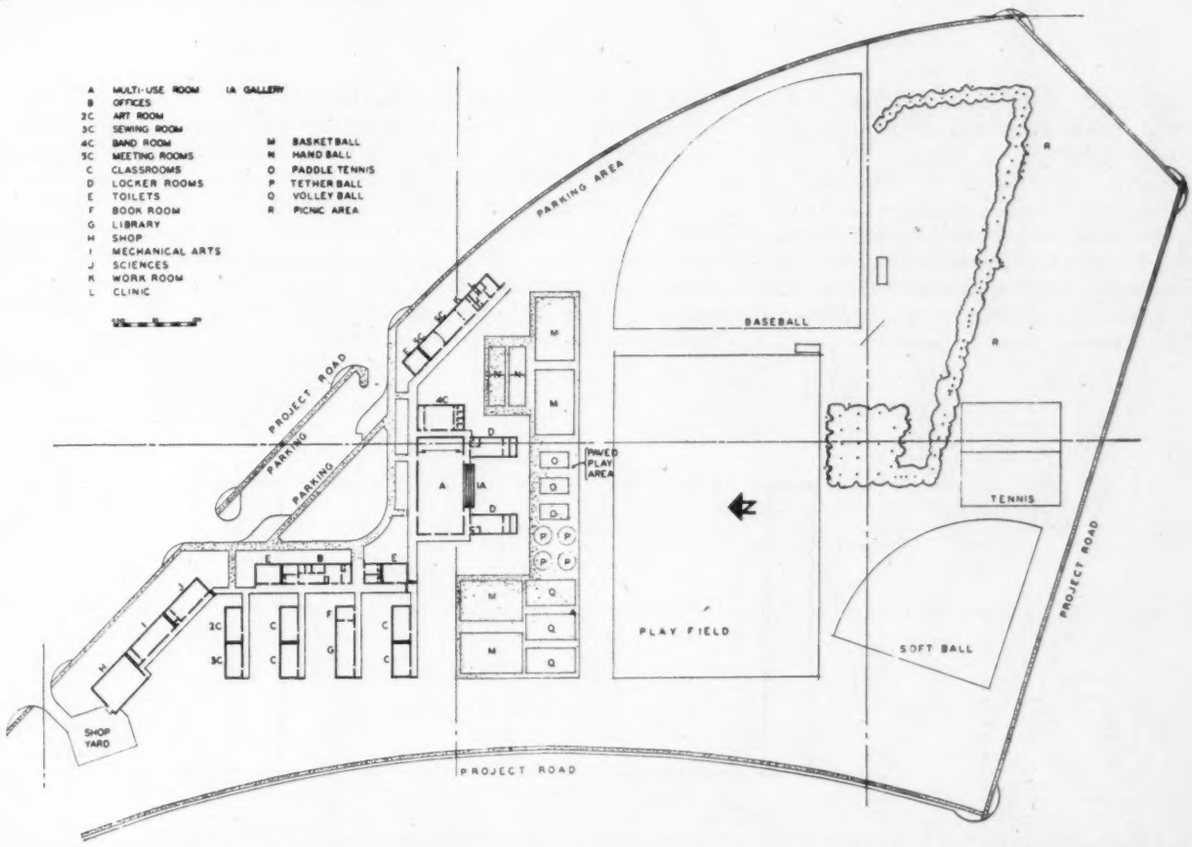


Below is Elementary School No. 1. In order to reduce costs unit "A", the auditorium-gymnasium-community room, was not built as originally designed. A typical classroom-sized unit was substituted for the contemplated structure.



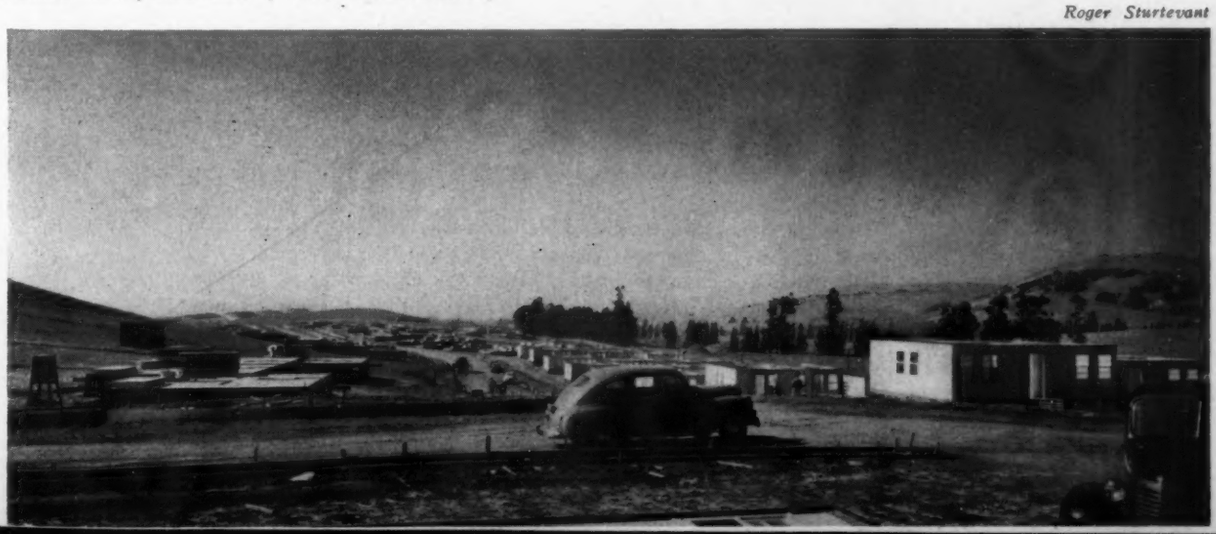


Elementary School No. 2, above, contains the same general features as No. 1. The less expensive multi-use room was also used in this school. Below is the plan of the Intermediate School, which also was eliminated to reduce costs, but whose lack may seriously hamper the educational program of the community.

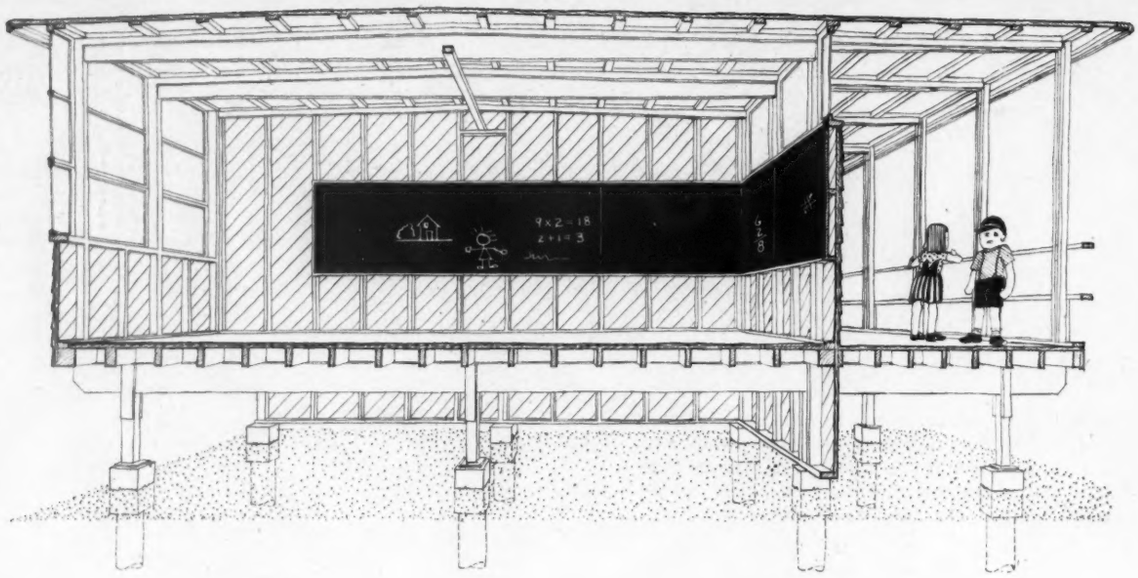


Photograph below is a general view of the site showing construction under way on the houses in August, 1942. (The complete project will be presented in a future issue of NEW PENCIL POINTS.)

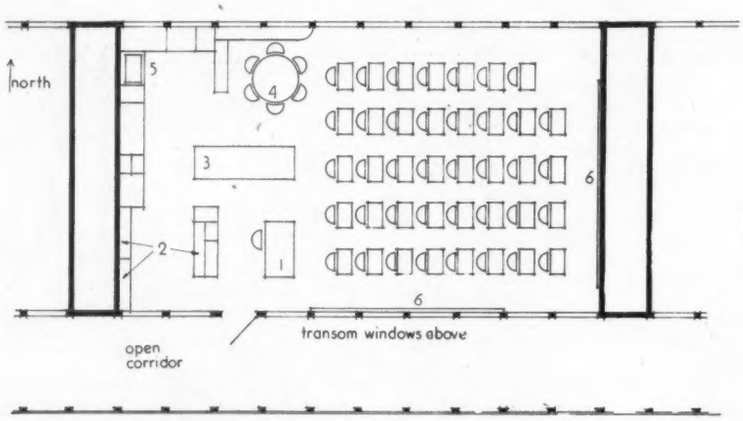
Roger Sturtevant



Schools, Chabot Terrace

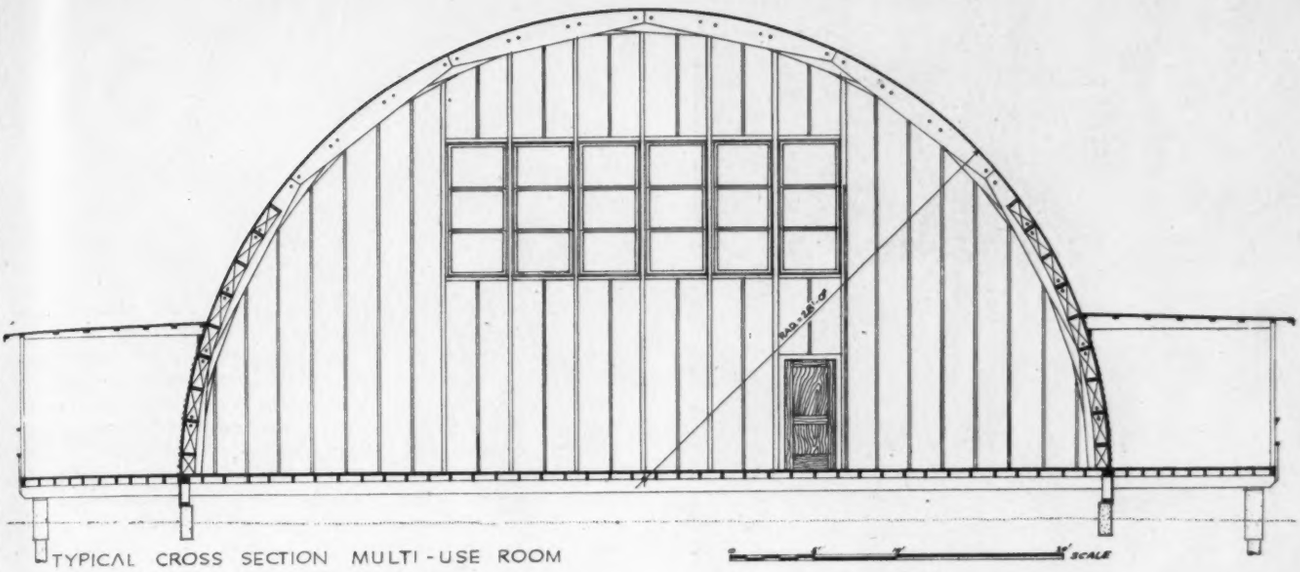


Construction on the Chabot Terrace school started June 28, 1943. It was built by the Emergency Operations Unit of the PBA. The buildings are built on concrete piles, approximately 8 ft. on centers longitudinally and 11 ft. transversly. This type of foundation was necessary because some of the buildings were placed on filled earth, and where they were not, clay-adobe soil prevailed. On these bases 4x10 girders 8 ft. on centers support 2x6 floor joists 16 inches on centers. Seismic forces are resisted by diagonally-sheathed shear walls. The sheathing extends from the top of the concrete pile cap to the sill of the corridor windows, on the corridor walls, and to the roof, on the end walls. The subfloor and roof sheathing are laid diagonally to provide two horizontal diaphragms. Vertical shear walls extend on three sides of each classroom. None of the intermediate subfloor joists needed diagonal bracing. The classroom ceiling is supported by 2x16 joists 4 ft. on centers with 2x4 blocking, placed flat, between. The corridor ceiling has 2x10 joists 4 ft. on centers. Each classroom is an independent structural unit, separated from the adjoining room by 4 ft.



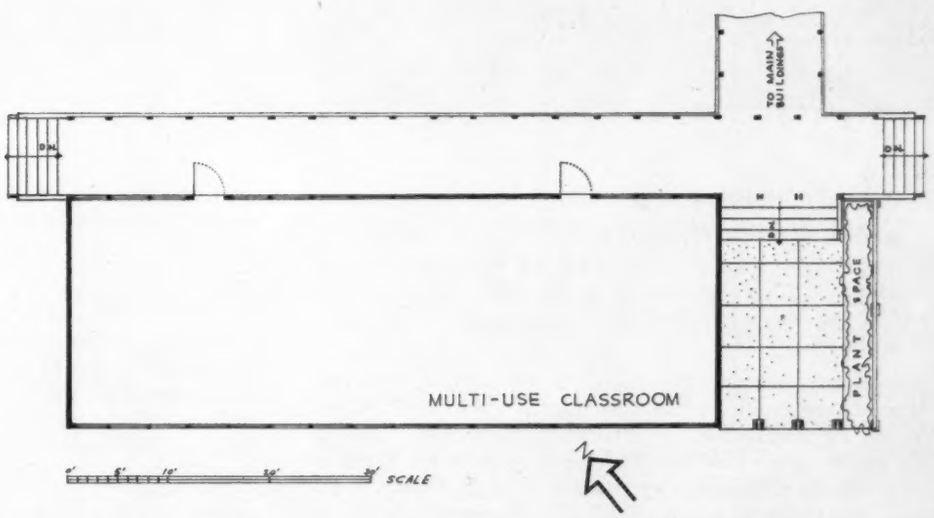
plan of classroom
1 teacher's desk
2 wardrobe storage
3 project table
4 reading table
5 sink
6 blackboard

The typical classroom has clear inside dimensions of 22x40 ft. The span was determined as much by the size of available framing timber as by school building codes. Originally this span was uniform for all units excepting the multi-use room. It should be noted that all the equipment in the classroom is in standard units which can be rearranged to suit the needs of a particular type of class or a change in classroom procedure. The seating arrangement is also flexible as long as movable furniture is used.



The multi-use room shown above was intended for the intermediate school. Although this school was eliminated, the design of this building, much like that used in the Carquinez Heights School, nevertheless is most interesting. Construction here required the use of laminated wood arches consisting of three 4x16 timbers, placed 16 ft. on centers. The roof was to be diagonally sheathed.

Exterior of all buildings is surfaced with 1x6 beveled redwood siding which was painted. Roofs are of composition with mineral surfacing. Interiors are of 1x6 Douglas fir, tongued-and-grooved and V-jointed. This surfacing is finished with a light stain. Heating for all units is supplied by gravity type oil heaters. Lighting fixtures are of the direct type.



The plan above shows the typical multi-use room substituted for the unit shown at the top of the page. The room used here has the same span as the typical classroom; that is, 22 ft. wide. This limits use quite drastically since games requiring a large area cannot be played in them. However, the change from the original scheme was deemed advisable both from the point of view of economy and because of the shortage of framing timber. Moreover, since the project is not expected to endure after the war, the schools have not been designed as permanent buildings.

Chabot Terrace is a development of some 3,000 houses, built under the auspices of FPHA for workers at the Mare Island Navy Yard. The 3,000 homes are now housing a population of approximately 10,000, of which the expected school population is: 60 for the Nursery School; 120 Kindergarten; 960 Elementary Schools; 390 in the Intermediate School; and 288 in the Senior High School. In order to economize on critical materials, these schools are expected to operate on a double shift basis, that is at 200% of capacity. Being for tax-free war housing, the population which these schools serve provides no additional school tax revenue for the school district. The government and the district cooperate to an extent. Cost of construction, equipment, and furniture was provided entirely by Lanham Act Funds. The school district pays part of the maintenances and operation expenses, through tax and tax allotments. The remainder is made up by the U. S. Government in lieu of taxes.

John Frederick Stanton

Publication of photographs of this type in a school study was, a few years ago, a tremendous step forward. It meant that architects were beginning to realize that changes in educational theory and practice really had an effect upon the type of building a growing curriculum needed. Obviously such activities as building a rabbit hutch, tending a garden and making finger paintings require different classroom facilities than learning the three R's. In the past few years, where climate permitted, classes began to move out-of-doors for an increasing proportion of the curriculum. Field trips began to be used in the lower grades as well as in high school and college. Now, as the photograph on the opposite page shows, even a reading class for youngsters is held in the outdoor classroom. All these photographs are of Ducor Elementary School, a rural school in the Ducor Union School District. Architects were Franklin and Kump.

(Continued from page 45)

ships than is possible in older cities. Wartime construction, hemmed in by restrictions, the need for speed and frequent compromises, is no place to look for the realization of an ideal, yet the community relationships so established provide much of interest.

A constantly recurring determinant in the form of these new planned communities is the schoolhouse, which serves as the nucleus of neighborhood or community units. Many facilities for answering the adult needs of the community are found in these schools, sometimes only as a matter of expediency, sometimes to mutual advantage of school and community; but at any rate the complexion of the whole school plant is undergoing a change. These schools become something of a symbol, the expression of a central organism which serves the needs of the community, young and old alike. That many of the citizens of these communities show some apathy toward the ideals of planners, educators, and social workers is not necessarily a significant commentary in the face of present conditions.

These two points, then—the promise of a re-examination of educational methods, and the recent further crystallization of the community school concept, both due in some measure to the war—are factors to be watched in postwar schools.

However, hopeful, enthusiastic predictions about the place that schools will occupy in the world-to-be are being booted about with gusto. Architects, planners, and educators have not been slow to seize upon the school as a once-neglected, but now important, embodiment of a new democratic spirit, and have proceeded to give it the works.

The architect will bear a great burden of responsibility in giving form to the postwar school plant. He is faced by a great divergence of educational aims and methods, and needs to be familiar with all phases of educational ideology, technical advances and legal data in order to discharge his function with skill and with credit to his profession. He must be able to design a school plant that becomes, in the hands of educators, a responsive instrument in the educational process.

Educational Aims and Procedures

To presume to define education is entirely beyond the scope of this article. But the nature of education and of the processes associated with it have a direct bearing on the determination of the forms of its shelter and related facilities. This is an attempt to examine some of those aspects of education which may be expected to affect most the work of the architect.

The executive organization of the public school system is probably one of the purest expressions of democracy in our country today. The Board of Trustees or the Board of Education is elected by public vote to serve its community, usually without pay, and is directly answerable to its district for the quality of the school system. This form of organization makes it possible for the school system to be a direct expression of the needs and

John Frederick Stanton

culture of its own district, although state standards and controls serve to give coherence to the many districts.

The smallness of this unit of organization contributes greatly to the existence of wide divergencies of aims and methods that characterize the school system—in general, an evidence of the working of democracy. In the existence of differences may be much of value as well as many difficulties. The range of views held by educators is so wide that there is room to believe that some confusion exists in educational aims.

There are two schools of thought in educational methods and aims, generally known as the traditional and progressive. These two terms are used here with some hesitation since they inevitably connote a judgment of their respective values, but certainly none is here intended. In fact, an architect who approaches a school client with a conviction one way or another regarding the comparative values of teaching methods runs the risk of imposing an alien interpretation on his client's needs.

The traditional school of educators holds that principles and truths are abstract and unchanging; that education aims to teach a student to think by referring in the teaching process to these truths and principles; and that a student properly grounded will be able to adapt the method of thought and analysis thus learned to any specific set of conditions. The activity program which aims at the coordination of mind and body is given less, rather than more, emphasis.

Opposed to this is the progressive school. It believes that education is achieved through experience and that branches of knowledge are assimilated by relating them to units of experience; that thinking becomes more real and useful when derived from conditions within range of the direct experience of the child. It follows that this system makes use of an extended activity program, intended to coordinate mental and manual skills.

The recent trend in education seems to favor the latter school of thought as does our present experience with education during the war. However, the war has indicated also an increasing need for the basic studies of mathematics, science, and English.

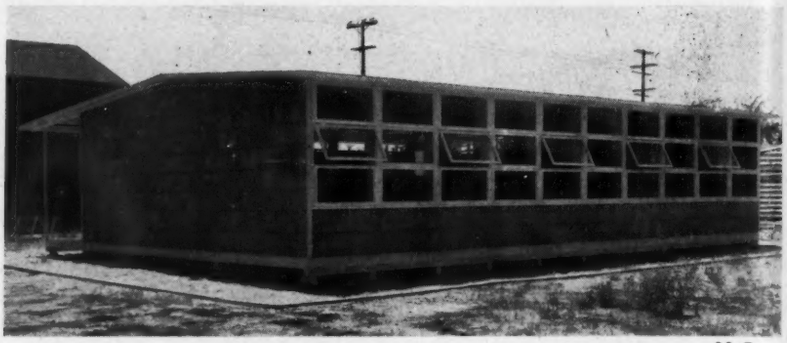
Our factories find that the best workers are those whose mental and manual skills are coordinated and who have a background of good general education which fits them for useful work by a short course in the special machines and techniques used in their task.

The skill that seems to be most generally adaptable is one developed in general terms by experience in broad classifications of machine tool operation. In vocational education highly intensive specialization in operating machine tools may not be undesirable in itself, but will probably involve heavy expenditures in capital outlay and operation that means a sacrifice of other desirable features of the school plant.

This tendency to specialize in education is characteristic, and curricula are increasing in complexity. There are courses given in calculus and in comptometer operation; in Greek and in hair

Manufactured, Prefabricated, Classroom-Office-Kindergarten Units

Ernest J. Kump Co., Architects



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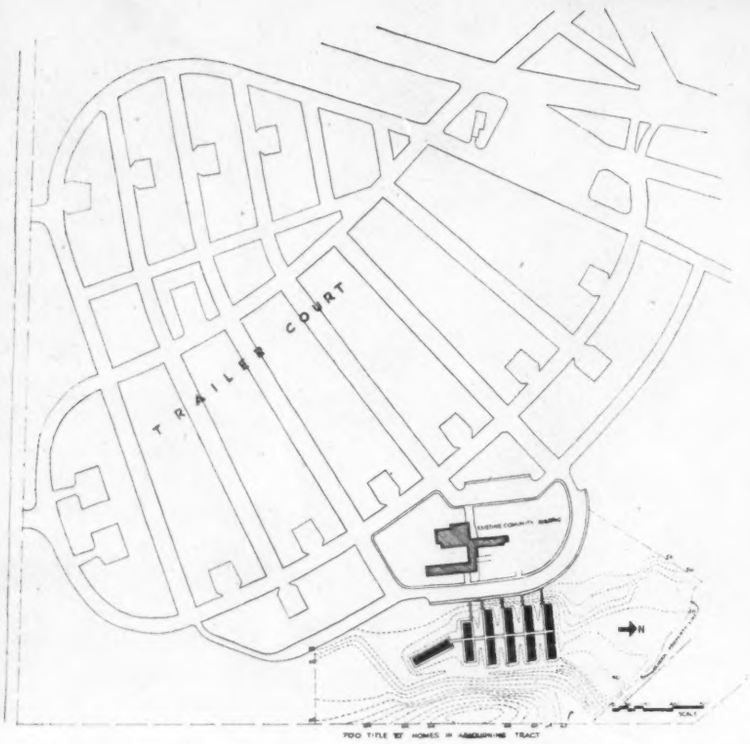


Designed for the Standard Engineering Corporation, these are portable school units built of panel construction supported by laminated 3-hinged wood arches. Interiors are shown on the following page. Wood floors are covered with mastic paving; wall panels are prefinished, of composition board on interior surfaces and with exteriors of shingle, siding, or plywood. Inside ceiling surface is insulating board, roof is mineral-surfaced composition. Lighting is furnished by indirect silvered-bowl reflector units. Heating is provided by gravity type, oil-fired space heaters. Blackboards are of composition. Cost per classroom unit (24 x 40 ft.) is under $3,000. One classroom, knocked down, can be transported on a single truck.

The San Pablo School, an elementary grade school in San Pablo, Calif., has 12 of these, used as classrooms, 2 kindergarten units, an office, library and multi-use room. Construction of the school has just started.

dressing. The field of subject matter in which instruction is being offered is becoming so spread out, and so much is offered, that it seems incredible that any one subject can be treated well. This is partly because of a demand for these knowledges and skills by students, partly because of the increasing specialization within the teaching profession, which seeks to justify its own specialization.

Not often considered a part of the whole educational picture is the varied array of agencies whose job it is to teach in one way or another. The school organization is generally thought to be the various, but simple, classifications of primary, secondary, and university levels of the public school system. But either supplementing these or competing with them we have numerous agencies, many of which teach only through subsidiary departments, as an answer to special needs or conditions. Some of these are: local, state, or federal government agencies; libraries; zoos; concert halls; business schools; parochial schools; and many others. It is obvious that this duplication of agencies invites waste, overlapping of functions, and perhaps a confusion inherent in our democratic freedom of choice.

Correlation in some measure of the work of these agencies as well as their plants would appear to be a desirable program in many communities, especially the smaller ones whose ability to support public institutions is limited. For instance, welding together into one series of related buildings the museum, library, concert hall, and high school, would create a learning and cultural community center in which the work and position of all would be enhanced.

The growth of the community school idea has already been mentioned here, but we might go farther with some of its educational implications.

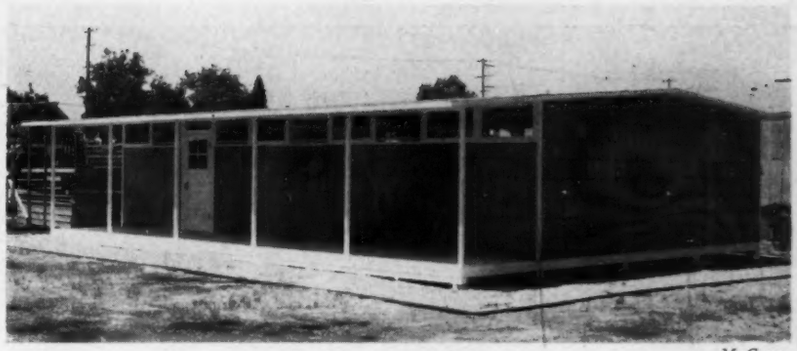
For the adult, it means in general the breaking down of the adult's belief that education is completed on graduation from school. His needs for learning are of exactly the same nature as those of the young student, except that his needs are more mature. Education is a continuing process. The adult is sensitive about returning to school; his interest must be cultivated with much tact and understanding, which requires the services of competent administrators and facilities for conferences. Exactly what he studies depends completely on what his needs are in his locality and the facilities offered by the school plant.

His participation may be in the form of organized recreation and athletic play, of social activities, or of forums and lectures. A fine line must be drawn concerning the kind of activities offered him, between those which have educational or creative value, and those whose only aim is amusement.

Of inestimable help are the services of the adult in planning the curriculum through meetings with the school administrators and the Board of Trustees, and in actually assisting in some of the learning activities of the students.

For the young student the community school idea, in a progressive curriculum, means that the community itself, as well as the classroom, becomes a laboratory for learning. To be specific on this point, let us suppose that the transportation system of the community is to be studied by a class. The study may cover

Postwar implications of this type of school construction are most provocative. The San Pablo School serves a recently completed trailer court and a 700-house war project to the east.



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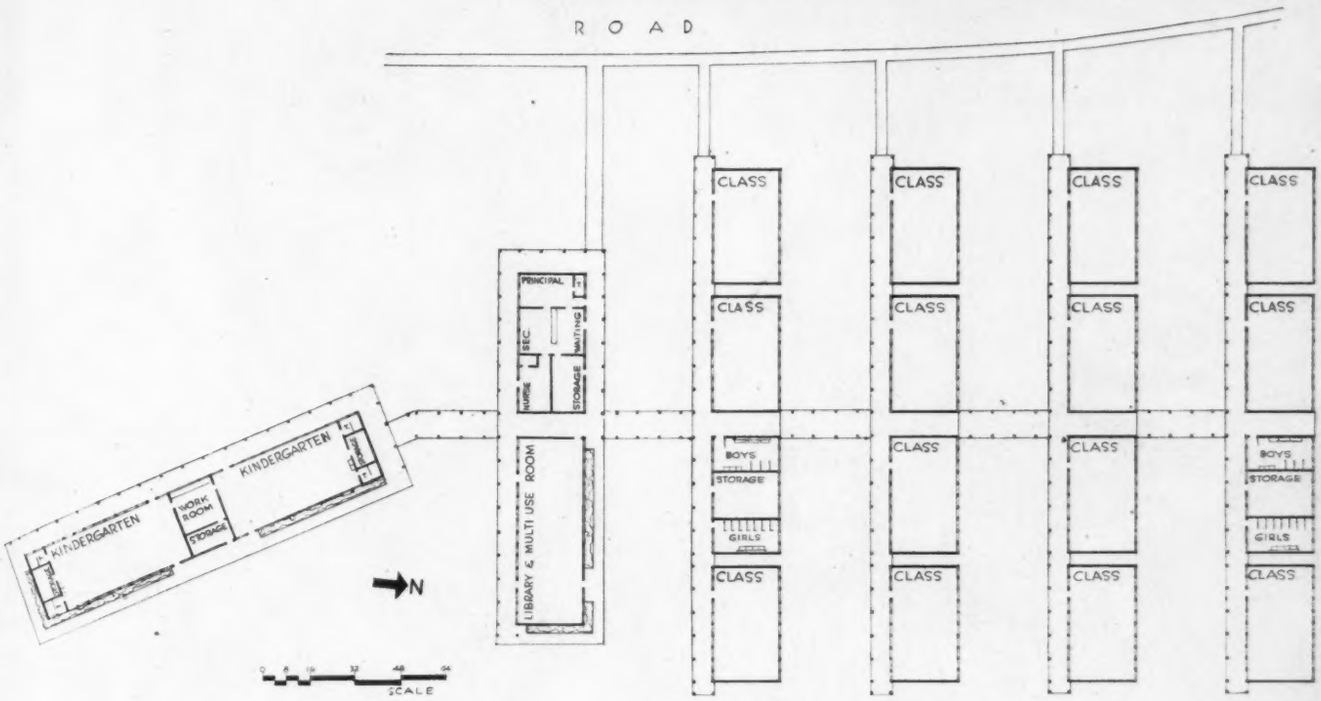


two days' time or three weeks', depending on the maturity of the group and the nature of the problem. At the preliminary meeting the teacher outlines to the group a general description of the subject and the method of attack. The class probably will be divided into groups, each group to gather material on different phases of the problem. One group may go to the library to study the rules and regulations of interstate commerce. Others may spread out over the community to gather information on local bus and street car lines, railroads serving the local area, and truck freight lines. In the meantime officials of street car lines, freight agents, etc. may meet with the class to discuss their problem with them. There will be many conferences, and large charts will be prepared for elucidation and comparisons. In the final meetings all the information will be correlated and conclusions drawn.

This is only one of many types of study that may be drawn from the local scene. It is described here in detail so the variety of activities may be sensed. The school plant must be such that these activities can be carried on efficiently; it cannot be confined within the four walls of the traditional classroom.

Such expansion of curricular activities is taking place in all grades, to varying degrees, under the teaching methods of both traditional and progressive schools of thought. Activities such as student clubs and student government, once generally thought of as extra-curricular, are now regarded as comparable in importance to work in supervised classes. In lower grades the teaching is likewise growing in activity and range, but because very young children must be constantly supervised, their work is localized in the indoor classroom, or the outdoor classroom if they are fortunate enough to have one, or they may be taken on short trips accompanied by their teacher. This teaching can benefit by being implemented by audio-visual aids, the public address system, and devices generally unknown to the teaching techniques of ten or fifteen years ago.

The nursery school is another feature of the public school system whose general acceptance has been widened because of the demands of our war economy. In areas where war industries have made use of women workers, nursery schools have come into prominence. Their recent rapid growth in importance has been due to the war. Nursery schools in some cases have been organized and operated by factories where public schools have not been able to undertake the job.

Although this recent nursery school growth has been a wartime expedient, it has done much to establish the value of pre-school training. Many authorities believe that the greater part of a child's personality is fixed by the time he is six years old. The very young child benefits from group contacts and supervision in the nursery school, and does this without losing any of the advantages of family relationships. It is generally agreed among the educators that the child who has gone through nursery school is better prepared for the primary school than the child who has not.

I believe it pertinent here to level one serious criticism at educators for their failure to master an idea that if properly understood would greatly aid the architect in his attempt to translate

Prefabricated classroom designed for the Standard Engineering Corporation by ***Ernest J. Kump Co., architects.*** *The school of which this is a part serves the community of San Pablo, which adjoins Richmond, California—where there is great shipbuilding activity. The town is another victim of war growth.*

their needs into buildings. In its essence it is this: Teachers and educators in general understand the school plant as a building that provides shelter from the weather. It is of the greatest importance to them in their work to grasp the significance of the complete school plant as an instrument of education even greater in use possibilities than textbooks and laboratory supplies. The plant is a tool for teaching. Its value must be measured in terms of increased teaching effectiveness. In order to realize these possibilities, the thinking of educators must be carried far enough to determine plant requirements, not merely in terms of blackboard areas and number of pupils per class, but in terms of instructional procedures, arrangements, and uses. The educational plant is a tool, responsive to program needs. The educator must aid the architect in determining its form.

Cost Factors

For our present purpose, a scrutiny of the field of education would be incomplete if only its philosophies and teaching techniques were considered. Behind the educational facade of teachers, pupils, curricula, and schools, there exists the machinery of operation which makes possible the educational function, and which directly affects the work of the architect in the field of costs.

In 1932, considering the country as a whole, roughly 75 % of all money spent on education came from the county and local taxes, 18% from State governments, and the remainder from other sources. Because of the local source of the large part of this money there is much unevenness in the money available to different districts. This is shown by the fact that in the same year the money spent per pupil in two different states varied from $154 to $31. Within many states there is a disproportionate distribution of the money used for capital outlay between urban and rural districts, but where consolidation programs are in operation expenditures tend toward a better balance. Most state governments recognize the need for providing money for current expenses but not for capital outlay, and thus the actual building money for school plants comes from the local district and reflects the prosperity of the district.

There is need for States to equalize their responsibilities in the two fields of plant construction and in operating expenses; there is some prospect of this in the offing. Some recognition of this problem was apparent in the PWA program of the 1930's. By making education a state function and redistributing the tax burden the children may be able to share more equally in educational opportunities. As it is, the children of poorer areas are penalized.

Salary levels of school teachers are so low they are almost a matter of national concern. Children, whose minds are in the formative stage, are worthy of contact with the highest type of individual only, and yet salary inducements are not adequate to secure such a type. A good teacher is a highly skilled worker, whose period of training is long, hard, and expensive, and

As the photographs show, the building is supported by laminated three-hinged wood arches, 4 ft. on centers, and is lighted by a clerestory on one side and full length windows flush with the ceiling on the other. Classroom units, of panel construction, are prefabricated. Project is shown in greater detail in preceding pages.

McCurry

whose abilities, though they may be directed differently than those in more highly competitive business enterprises, are deserving of comparable salaries. The only answer to the need for improved teaching personnel is better pay. From 50 % to 65 % of school money is disbursed in the form of salaries; and if this percentage is increased the money available for capital outlay will shrink below its usual 10 % to 15 %.

The prospect, then, is that expenditures for school plant operation will increase due to: Increased community responsibilities; expanding teaching programs; higher salary costs. Equally true is that it will be harder to increase the amount of available school money for many years to come due to: War expenses; mounting cost in the operation of the federal government; increased living costs, etc. It can be left to the traditionally fertile architectural imagination to find out how much money is left to build the school of the future. In the face of this a discussion of the values of monumental as against more informal and economical schools seems academic.

Intimately related both to questions of cost and problems of regional planning is the matter of land sites for school plants. Programs of health, recreation and play, and the increasing openness of planning, demand larger sites. In California the minimum acceptable site for elementary schools is five acres and even larger ones are desirable. It is not always possible to obtain sites of such size. Some experienced educators recommend 20 acres for primary schools, 40 acres for secondary schools, which is intended to apply to urban districts as well as to those in the rural areas. Of the need for larger sites there can be no doubt. Of the probability of obtaining them there can be much doubt when urban schools are faced with the present high cost of land and the impossibility of finding the means to make the land available.

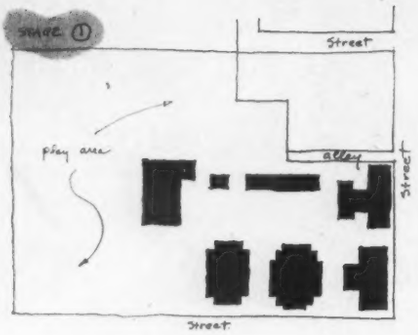
Rural areas have developed a workable and widely practiced system of bus transportation for their pupils. The same principles applied to urban areas would result in moving school sites to available, more open land, on the urban fringe. This might be one of the possible solutions to the difficult problems of the site for the urban school, whose children must have the advantages of air and play space.

In anticipating postwar problems there has been an unreal preoccupation with questions of community planning and of the ideal sites for schools in the community. Such problems are more likely to be in terms of existing sites and their possibilities for expanding, and in terms of the reconditioning and growth of the structures now standing.

Not all school districts will face the prospect of expanding enrollments. The slowing growth of our population and the tremendous and as yet relatively unknown population shifts may mean that a program of contraction is in order for some areas.

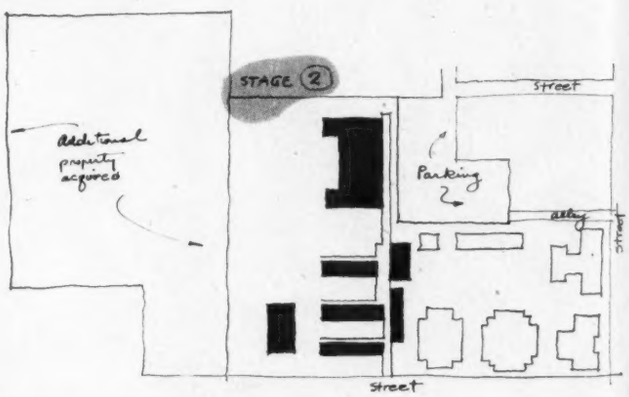
Controls and Design Standards

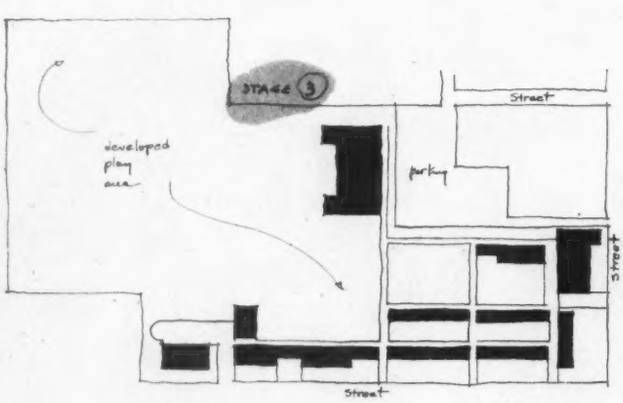
In practically every state in the country there are building regulations, the purposes of which are to secure certain minimum



This is a school plant as it existed in 1935. Some buildings were obsolete, more buildings were needed, and a larger site was mandatory.

As the first step in modernization, new property is acquired, one of the obsolete buildings is razed, and new prefabricated building units are located for the best present use of the site and the best relationship to the remaining buildings.





The ultimate form of the school plant is here visualized, taking into account anticipated development and use of the entire plot. Prefabricated building units used in the second stage are relocated on the site and form part of the new plant. Room is left for further expansion. This represents efficient use of the site area. Sketches on this and other pages were especially prepared by Robert Kaestner and the author.

standards in school plant design. To insure uniformity of requirements and justice in their enforcement, they are almost invariably set up as codes.

Requirements as to fire, panic and structural safety lend themselves to codification without running the risk of working hardships. They are usually based on performance standards and allow considerable freedom in design without necessarily imposing hindrances on the designer.

There are other standards, however, which do limit designers and school districts, not necessarily in their intent but in the nature of their requirements. For example, when a code specifies a 12 foot ceiling height in classrooms, or a window area of 1/6 or 1/10 of the floor area, it is an unnecessary restriction on the development of new schoolroom designs. In both of these examples the intent is probably to insure adequate light based on a scheme of unilateral lighting; or to provide a given amount of air per student.

When a system of bi-lateral windows is used these standards are useless; light then comes from two sides of the room and cross ventilation can be obtained. If the code stipulates, however, that a given number of foot candles shall fall on every desk in the room, no matter where the desk may be located, then there is an encouragement to ingenuity of design consistent with the maintenance of minimum standards. This is only one example; there are many.

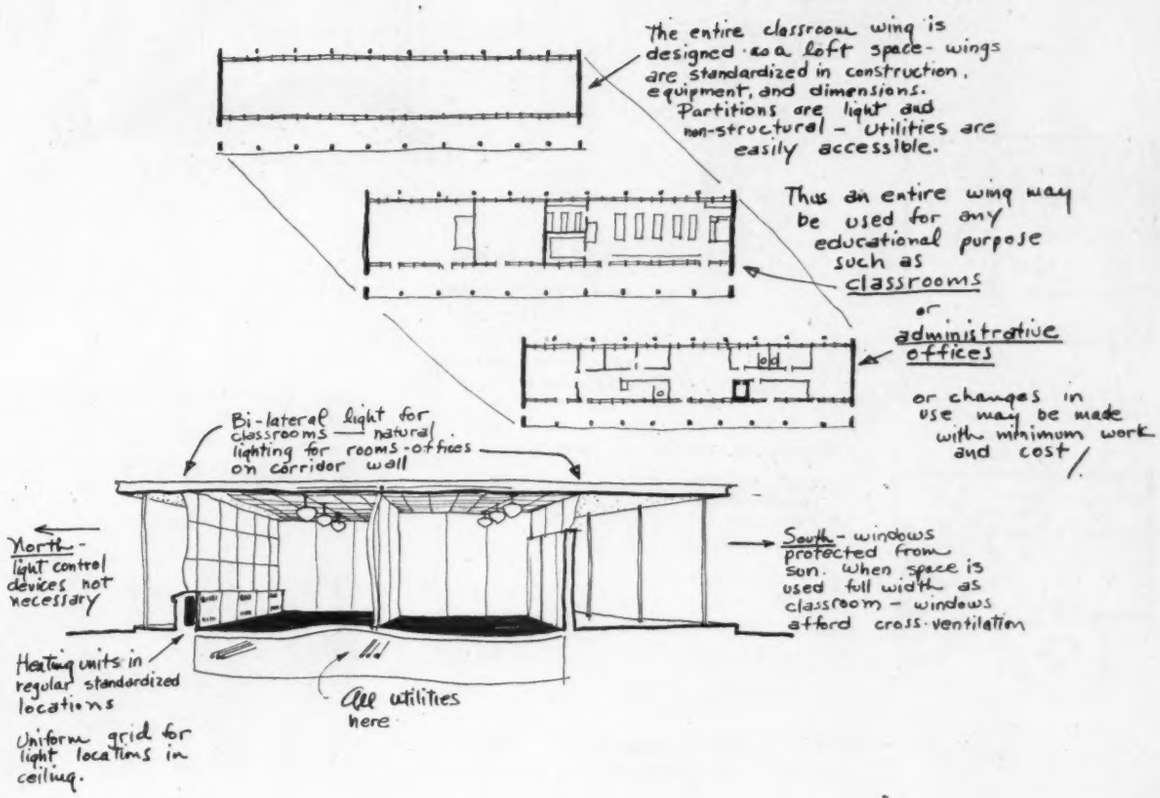
The influence of design exerted by code requirements is equalled by the nature of their enforcement and interpretation. The code and the manner of its enforcement are interdependent. It may be enforced by an arbitrary and literal interpretation; or it may serve as a guide by reference to which all problems are judged on their merits.

In California there is a very fortunate segregation as to types of requirements. The State Division of Architecture passes on matters pertaining to structural safety, resistance to seismic forces, fire and panic. Its judgment is based on code requirements, and allows the freedom of a wide range of intelligent solutions.

The Division of Schoolhouse Planning of the California State Department of Education, under Dr. Charles Bursch, deals with problems of function, of site arrangements, of lighting, of hygiene, and of teaching facilities. Each design is analyzed and judged on its own merits, with reference to performance standards and in the light of past experience. As an indication of the effectiveness of this agency, this writer believes that it is in a large measure responsible for the development of modern school plant design in this state.

Fixed standards of design and layout may do more harm than good. They are often improperly used as devices to avoid creative and independent thinking, and even at best they only determine minimums which should serve as points of departure. They are subject to immediate obsolescence. A 23-by-36-foot classroom is inadequate by any standard if it fails to meet the needs of a specific program.

In the sketches below are illustrated principles of unit design based on the experience of Franklin and Kump and the Ernest J. Kump Company. The influence of many other school architects is, of course, discernible. It should be noted that the clerestory window is dropped below the corridor roof. Franklin and Kump first did this in the Ducor Elementary School. A later development is to be seen in the Exeter School.


The entire classroom wing is designed as a loft space - wings are standardized in construction, equipment, and dimensions. Partitions are light and non-structural - utilities are easily accessible.
Thus an entire wing may be used for any educational purpose such as classrooms
or
administrative offices
or changes in use may be made with minimum work and cost
Bi-lateral light for classrooms — natural lighting for rooms-offices on corridor wall
North - light control devices not necessary
South - windows protected from sun. When space is used full width as classroom - windows afford cross-ventilation
Heating units in regular standardized locations
All utilities here
Uniform grid for light locations in ceiling.

Standards may not be universally applicable. Just a few years ago a study of school design was published in which it was stated: *"satisfactory classroom orientation, in order of desirability, has been found to be southeast, east, west, or south."* In the practice of our office it has been found that *north* is the only desirable orientation of major window areas for maximum seeing efficiency. Well——?

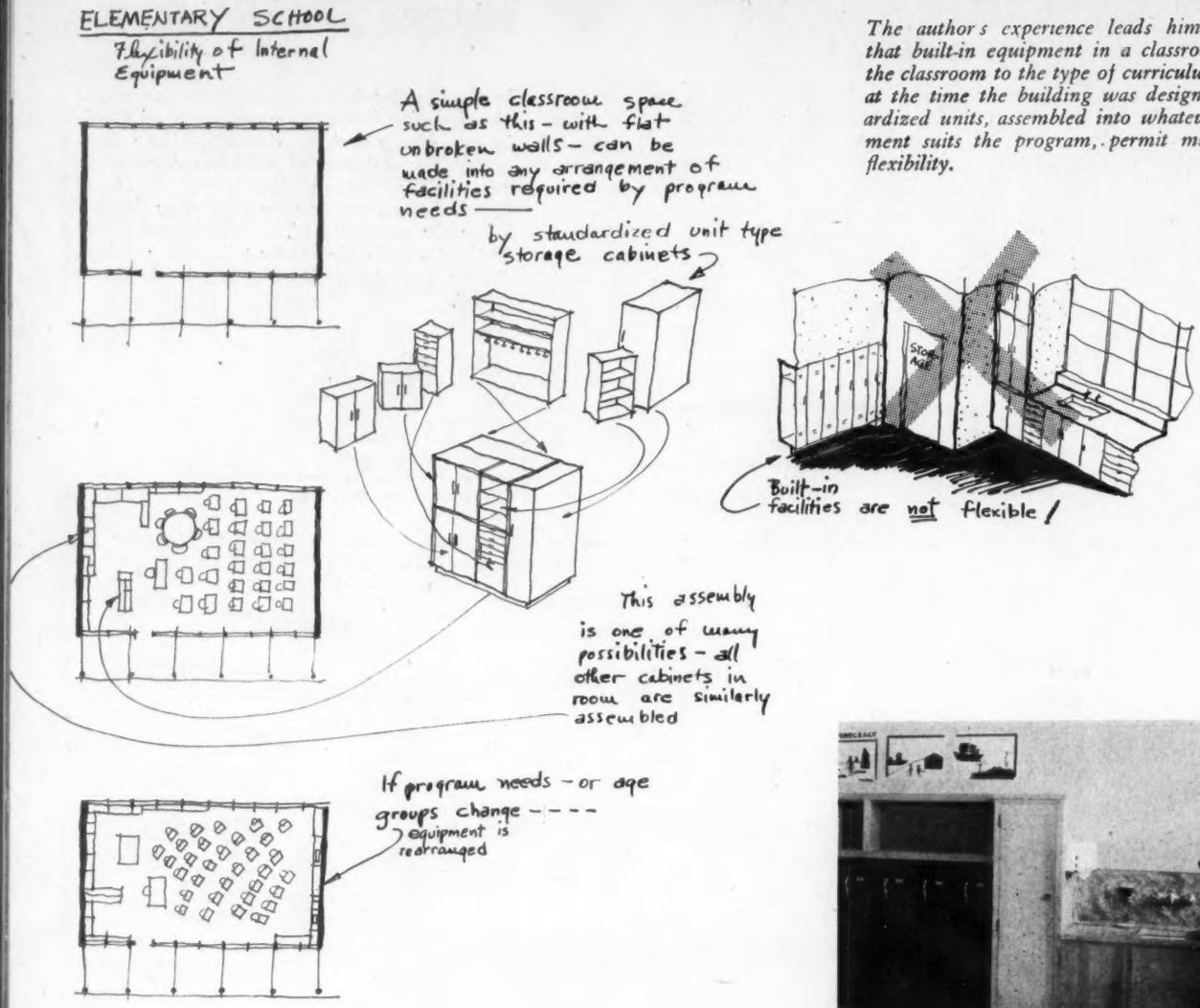
Design of the School Building

The architect is the key man in the design and construction of the school plant. His problem is the resolution of the program needs of the school district into a well balanced, well integrated design. The implications of this are often overlooked. To use costly materials or mechanical equipment, to develop an unnecessarily complicated structural system that demands more than its relative share of the building budget, and because of these, to sacrifice needed space or educational facilities, is a failure of the architect's professional service. If the school board wants more than the budget will allow even with the most judicious use, the board should be so advised and not find this out on the night of the bid opening; they should then be helped in formulating a building program that is within their reach. If a school board is totally unacquainted with building problems, the architect becomes the educator, the school board the pupils; but never must the architect impose his educational philosophy on the board. He may do so as a citizen, however.

I cannot be specific concerning the minutiae of building problems. Solutions must be *found* for special problems, not pulled out of a book. Nevertheless some comments on different pertinent subjects are incorporated in the hope that they may provoke thought.

Building costs: As was mentioned, the architect must be able to provide more building for less money. This has been especially true in war-time schools. But therein lies a challenge to the ability of the architect and a real opportunity for creative work. The philosophy behind the building of war-time schools has unfortunately been to provide something that will get by for the duration, until something better can be had. Instead, improvements on the practices of peace-time, rather than substitutes for them, must be developed. Experimentation should be stimulated in the direction of light, airy, quickly built structures with improvements in teaching facilities.

Adult education: The use of the school by the adult imposes certain unique problems. He uses the school plant generally at night and this use brings up considerations different from those of daytime use. Exterior lighting must be such that parking and entrances are well related and easily found. Paths of travel in the building must be simple and direct. The administrative offices must be separate from those used by the daytime staff, and they must be provided with ample conference areas, and facilities for keeping separate records and files. Since the size of furniture used by adults may be different from that used by the daytime pupils, classrooms for instruction must have flexible seating and equipment with spaces for furniture storage


ELEMENTARY SCHOOL
Flexibility of Internal Equipment
A simple classroom space such as this - with flat unbroken walls - can be made into any arrangement of facilities required by program needs
by standardized unit type storage cabinets
Built-in facilities are not flexible!
This assembly is one of many possibilities - all other cabinets in room are similarly assembled
If program needs - or age groups change - - - - equipment is rearranged

The author's experience leads him to believe that built-in equipment in a classroom restricts the classroom to the type of curriculum in vogue at the time the building was designed. Standardized units, assembled into whatever arrangement suits the program, permit much greater flexibility.

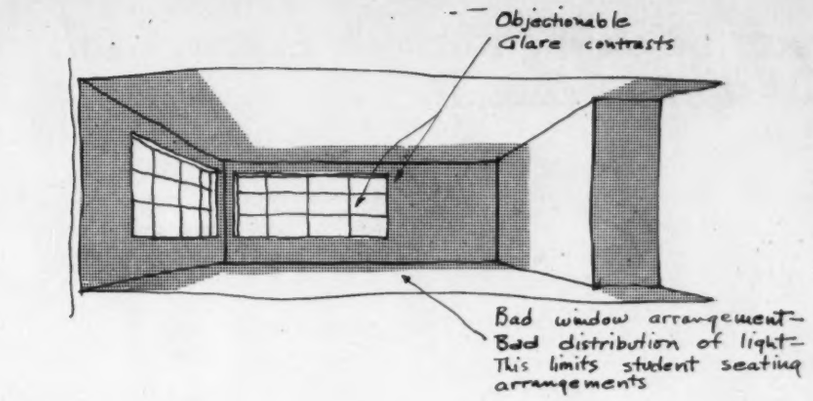
At the right is standardized unit equipment in use in the Ducor Elementary School.

as well as separate storage for adult work. Where the district allows it, there should be recognition of the need for smoking.

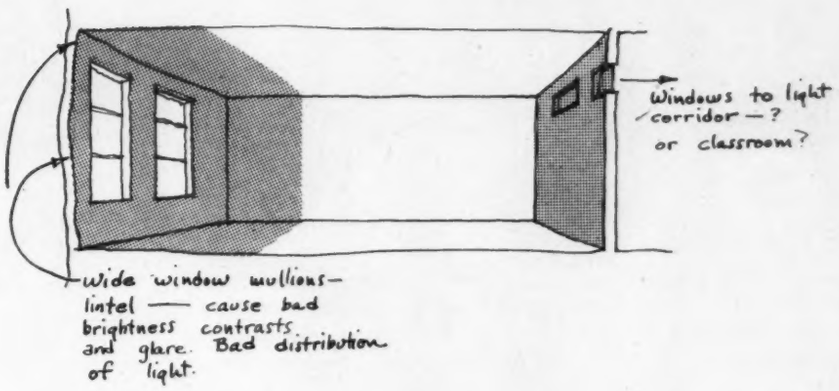
Flexibility: The anticipation of growth and change through flexibility of plant is of greatest importance and can do much toward postponing eventual obsolescence. The manner in which flexibility is achieved is dependent on the type of use. For instance, an elementary classroom is something of a self-contained unit; its flexibility is one of equipment and of internal arrangements. The problem of flexibility in the high school plant is more complex. The mathematics room and language room of this year may, next year, have their spaces consolidated and converted into a biology laboratory. An entire classroom wing should be considered as a loft space with interior partitions such that they can be easily rearranged and mechanical lines and equipment readily accessible. Large spaces such as cafeterias and study halls must be capable of accommodating many functions with a minimum of change or rearrangement. Gymnasiums and auditoriums are expensive spaces and should yield many types of use.

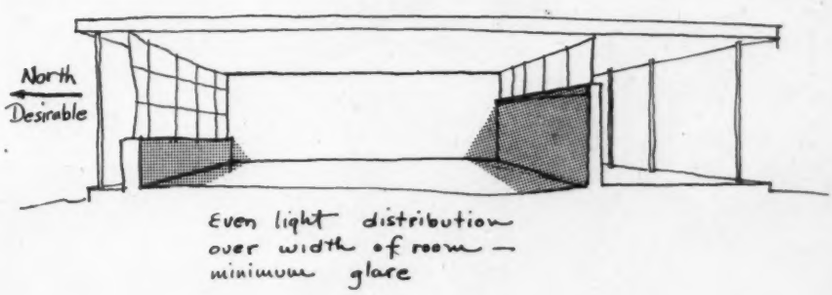
Lighting: In a well designed schoolroom the use of artificial light during the day should be resorted to but seldom, even in eastern zones. Much study has been directed towards design and use of artificial light when its importance is secondary to the proper use of natural light. If artificial light is needed to supplement daylight it should be mechanically controlled by photo-electric cells. In the experience of our office, unilateral light is altogether unsatisfactory. The endorsement of 8 to 12 foot candles on every desk in the room by authorities in lighting represents a minimum. 60 to 75 foot candles and even much more are possible on all desks with bilaterally lighted rooms in the California area. In our practice it has been found best to provide, in both longer walls of a classroom, windows which are continuous from wall to wall and which extend flush with the ceiling line. Wide window mullions or blank walls adjacent to window areas in the same plane produce highly objectionable glare sources. Blinds or louvres are most satisfactory when properly adjusted and fixed at the correct position. Bilateral lighting should not be considered a feature peculiar to one-story buildings only; it has been developed in European examples of multi-story buildings.

Mechanical equipment: The most difficult problem posed by mechanical equipment is its integration into the design of the building so that it is capable of flexibility in use and in rearrangement. Convector radiators and light outlet locations, especially, should be placed in a regular pattern, the former on outside walls, so that new divisions of space by partitions will not unbalance the system. Water, gas, and power should be easily available for installing new equipment. Radiant heating has not been particularly favored in California because, even during winter, heat is not always necessary during the entire day.


Objectionable Glare contrasts
Bad window arrangement— Bad distribution of light— This limits student seating arrangements

The question of window area and orientation has long plagued school architects. Many school building codes have required, on the window side of the standard, unilaterally lighted, 22-ft.-wide classroom, that part of the wall next to the blackboard be solid, to prevent glare on the board. In many classes today, blackboard work is limited. Where it is required, diffused lighting from either natural or artificial sources can eliminate the objectionable glare.


Windows to light corridor — ? or classroom?
Wide window mullions— lintel — cause bad brightness contrasts and glare. Bad distribution of light.



The advantages of its use are more applicable to colder climates where heat is needed for a longer daily period. The effect of such new items of educational equipment as television on the size and shapes of rooms is unknown as yet. Their use can be anticipated in the near future and their requirements will demand changes in our traditional room layouts.

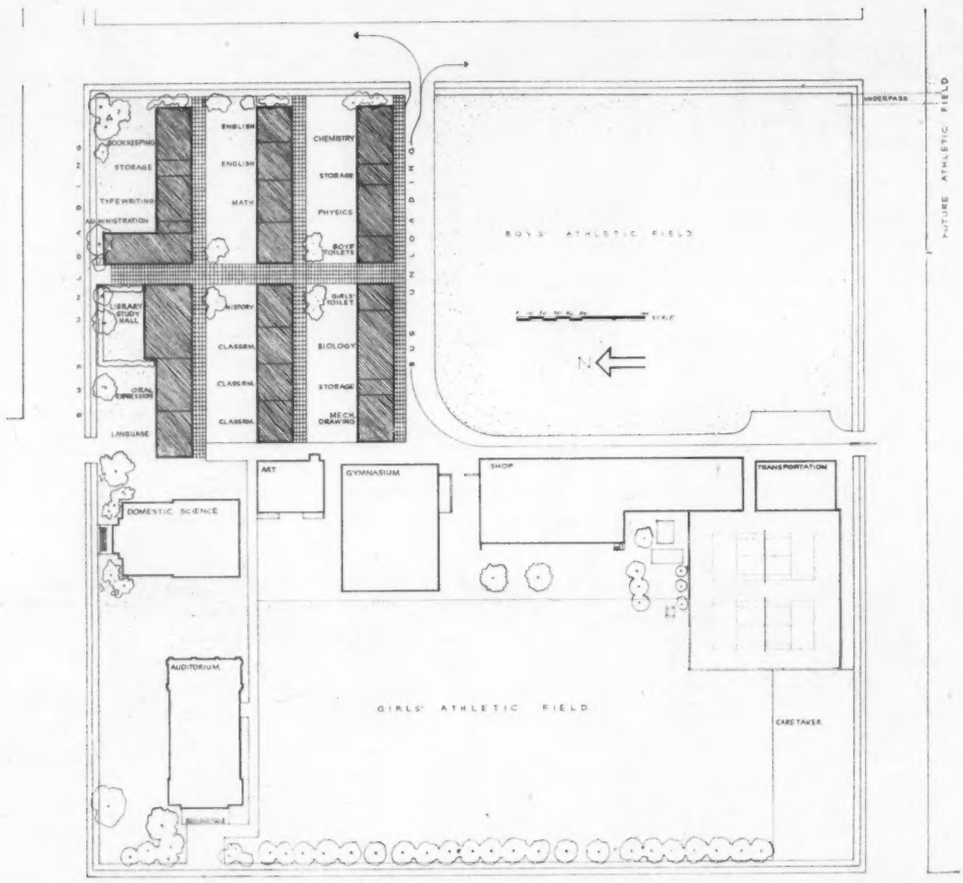
Prefabrication: This building technique has grown rapidly during the war and has been used on some wartime schools. Its full significance, however, will be in the field of postwar construction. One of the potentialities of prefabrication lies in the prospect of obtaining building economies. As has been pointed out, this is particularly applicable to schoolhouse construction in solving problems of cost. Prefabrication's advantages would be limited if confined to cost only; as important as economies are the many other ways in which its use may serve as a help in the development of education. We are not yet fully aware of the complete extent of its postwar applications, but some of them are already being seen. Prefabrication's wartime products have left an unpleasant taste in the lay citizen's mouth; one of its first assignments will be to live down its wartime reputation. New materials, new factory methods and factory tools, will produce prefabricated building units and products which in finish and appearance values will command wider acceptance, and together with this, wider markets. With a rational unit system of structural parts will come the standardization of furniture, equipment, and the tools of teaching. The consistent and complete integration of the entire educational plant will be more possible of realization than at present; the mixture of handcraft methods and factory processes now employed will become less characteristic of the building trade.

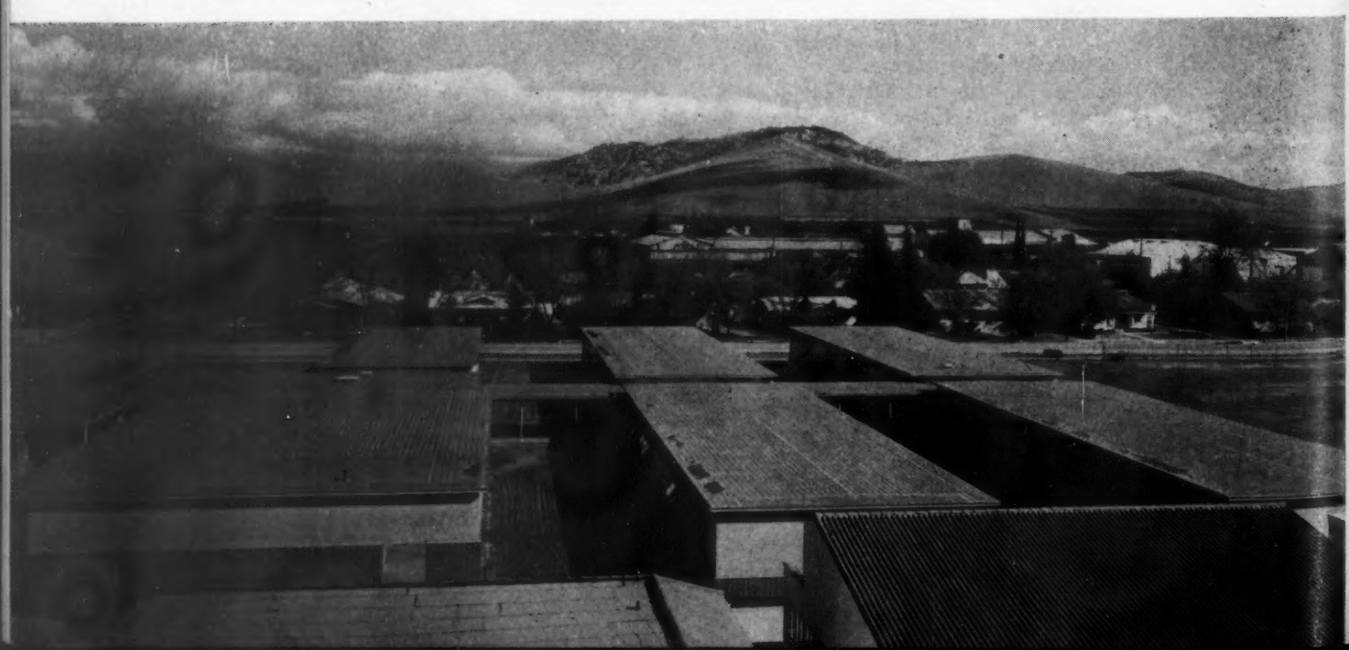
Many school districts now find it difficult to absorb improvements in curriculum and method because of permanent and costly plants rapidly approaching obsolescence. They cannot afford to abandon their present schools and rebuild, although many of them would like to. A gradual growth or change in their plants will be possible by means of light prefabricated classrooms which can be located in available spaces on their sites, as needed. When it is possible, finally, to get rid of the original permanent buildings, these light, manufactured classrooms may be rearranged on the site in terms of the best use of the land. This would seem like a far-fetched prediction were it not for the fact that many schools in this state are now replacing their original structures gradually with modern schools; but the modern additions are equally fixed on the site. This makes it hard to plan in terms of the full eventual use of the site area. Thus prefabrication may afford a means of achieving a fluidity in building which is capable of meeting the needs of the constantly changing fabric of community and regional life. The schools of the future must be a flexible organism capable of developing with our growing concept of education.

Exeter Union High School, Exeter, Calif.

Franklin and Kump, Architects

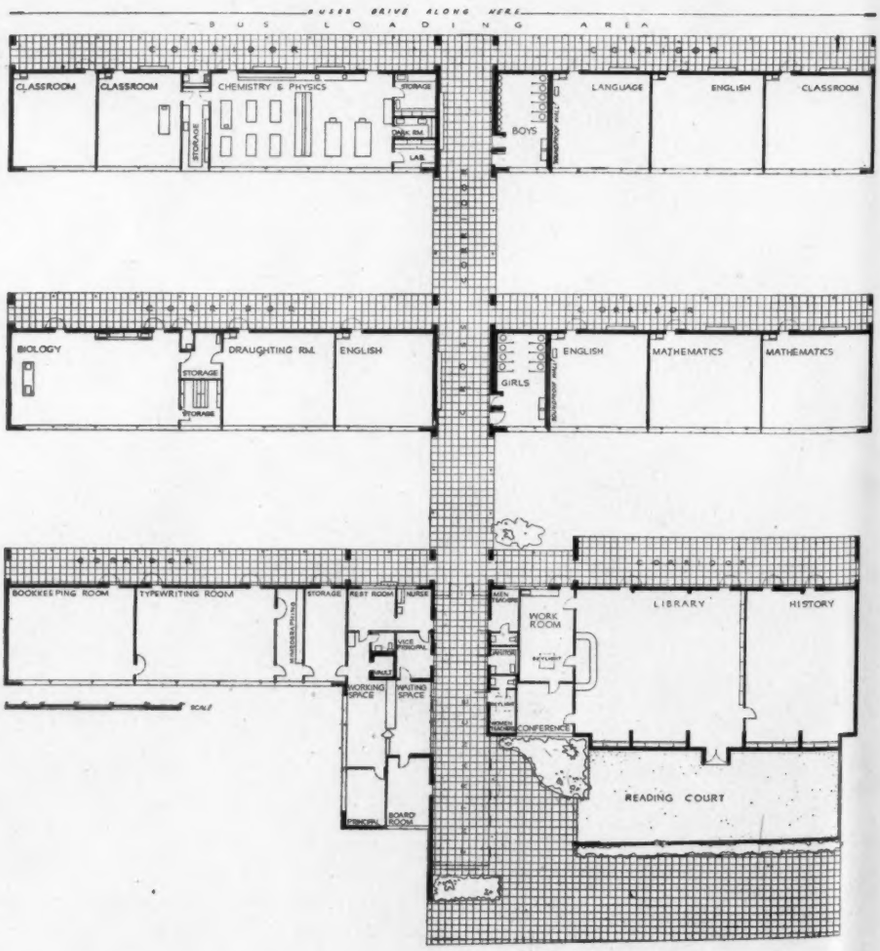
Exeter Union High School, unlike some of those shown previously in these pages, is not a war project. The architects consider it one of the best prewar schools in many ways. Exeter is a moderately small country town; many students are brought in to school by bus from outlying districts. Plot plan below shows that this is a modernization of an existing school, and that parts of the old plant remain in use for the present.





All photos by John Frederick Stanton

South corridor is used for bus loading and unloading in afternoon and morning, out of school hours. The major window orientation is north throughout. Construction in general is brick foundations on concrete footings (to reduce costs), with wood frame, brick veneered, above. The library wing has rigid steel framing. End walls of each wing, and corridor walls, are designed to take seismic forces. Exterior is faced with brick and stucco; sash are steel, and floors are concrete in corridors, maple inside. Cost of construction was $156,008, not including fees. Roofing is 6-oz. copper. A. A. Coddington was the mechanical engineer.

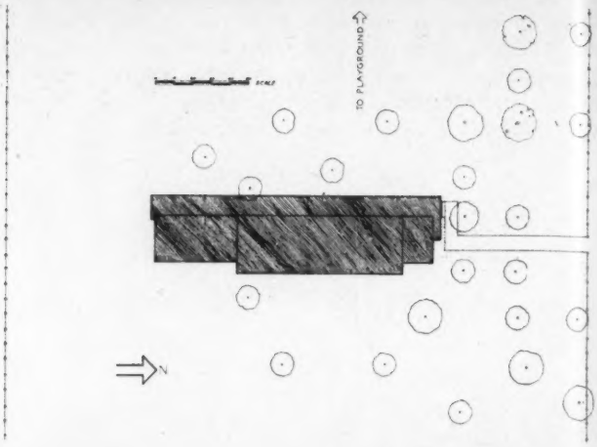

BUSES DRIVE ALONG HERE
BUS LOADING AREA
CLASSROOM
CLASSROOM
CHEMISTRY & PHYSICS
STORAGE
STORAGE
PREP. RM.
LAB.
BOYS
LANGUAGE
ENGLISH
CLASSROOM
BIOLOGY
STORAGE
STORAGE
DRAUGHTING RM.
ENGLISH
GIRLS
ENGLISH
MATHEMATICS
MATHEMATICS
BOOKKEEPING ROOM
TYPEWRITING ROOM
DUPLICATING
STORAGE
REST ROOM
NURSE
VICE PRINCIPAL
VAULT
WORKING SPACE
WAITING SPACE
BOARD ROOM
MEN TEACHERS
WORK ROOM
LIBRARIAN
VAULT
WOMEN TEACHERS
CONFERENCE
LIBRARY
HISTORY
READING COURT

Interiors have Douglas fir plywood partitions, finished with light stain. Ceilings are finished with acoustic tile and insulated with mineral wool. Blackboards are slate. Heating, originally designed for copper convector radiators, was changed slightly by war necessities. Steam radiators taken from razed school buildings on the site were eventually installed. Steam comes from the existing plant; there is supplementary gas heat in the office wing for evening use. Classroom lighting is direct.

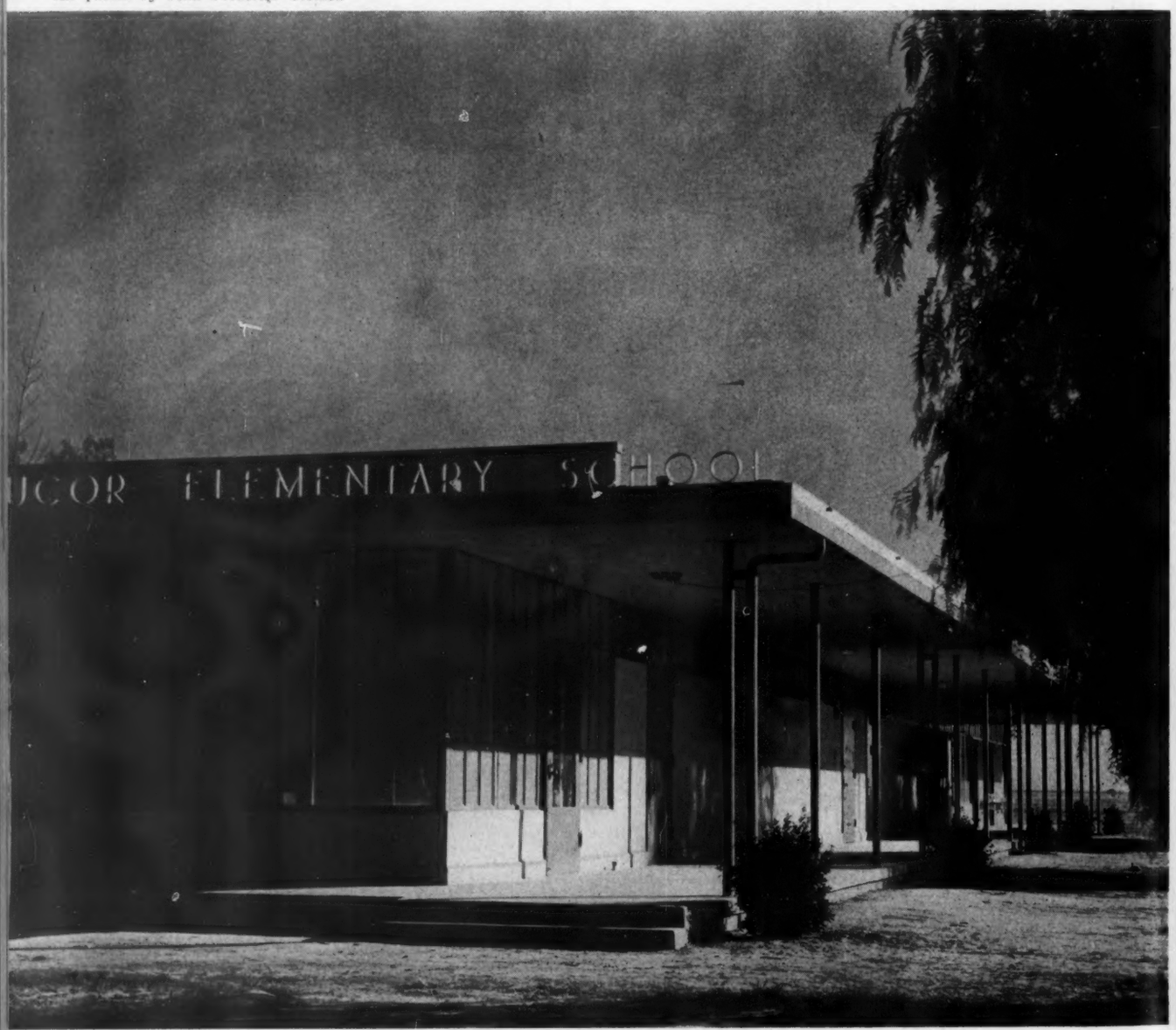
Below, library; at right, library desk, and above, typical classroom.

Elementary School, Ducor Union School District, Ducor, Calif.

Franklin and Kump, Architects



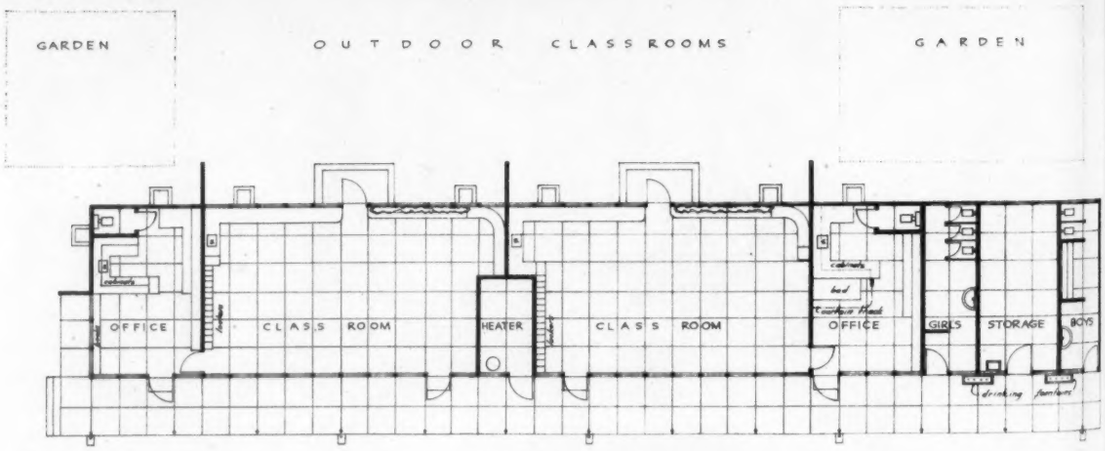
All photos by John Frederick Stanton



Ducor is a small town; the school is decidedly rural in character. In designing it, the architects found the teachers' participation in planning to be most helpful. Orientation of classrooms is east, principally because the many trees on the site required. The site is quite large, with a large recreational area to the west (not shown in plot plan).

Shown below are the outdoor corridor and the west wall of the classrooms, broken by wing walls which not only give a degree of privacy and sunshade to the indoor-outdoor classroom units, but also stiffen the building against seismic forces. Clerestory windows were put under the corridor roof in this school for the first time in Franklin and Kump's work. This detail was simplified in the later Exeter School.

Construction is wood frame, stuccoed, on concrete foundations. Roofing is of galvanized iron tiles; sash are steel; floors inside are covered with linoleum; corridor floors are concrete. Blackboards are slate, with metal trim and chalk trough. Tackboards are of composition. Interior walls and ceiling are plastered. Heat is supplied by an oil-fired hot air furnace. Cost, not including fees, was just under $22,500.

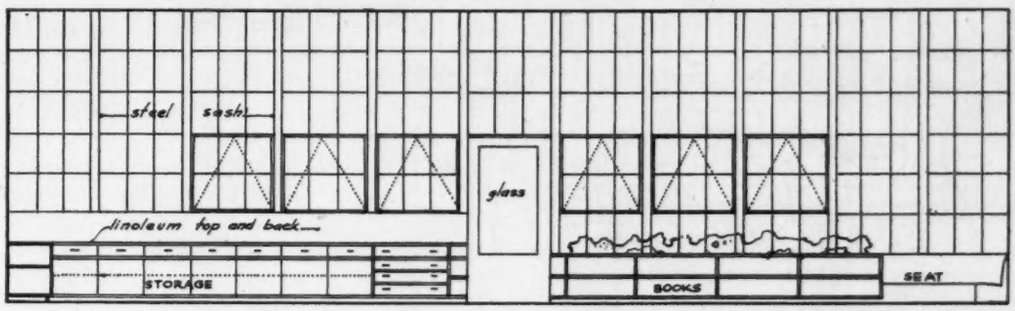


Plan and photographs of Ducor Elementary School on this page show a few results of collaboration between architects and school personnel in the early stages of planning. The outdoor corridor houses the drinking fountains. Gratings shown in the corridor floor at classroom doors serve as footscrapers; the site is muddy and requires that some such provision be made. It can be seen in plan that each office contains a reasonably complete kitchenette, and that activity areas of classrooms are amply provided with storage and work facilities, many of them of a unit type, so they can be regrouped to satisfy changing needs.

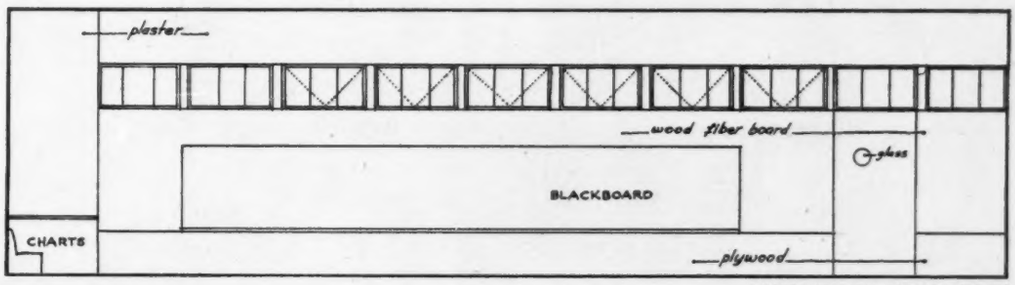
Selected Details

Typical Classroom, Exeter Union High School; Franklin and Kump, Architects

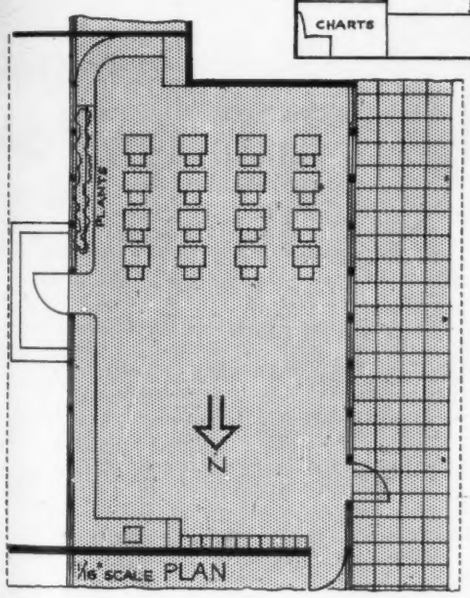
Orientation of this classroom differs from Franklin and Kump's usual practice due to site conditions. Activity area is included within classroom; study alcove in southeast corner. Clerestory is under corridor roof; construction somewhat complicated; compare with Exeter classroom on following page.

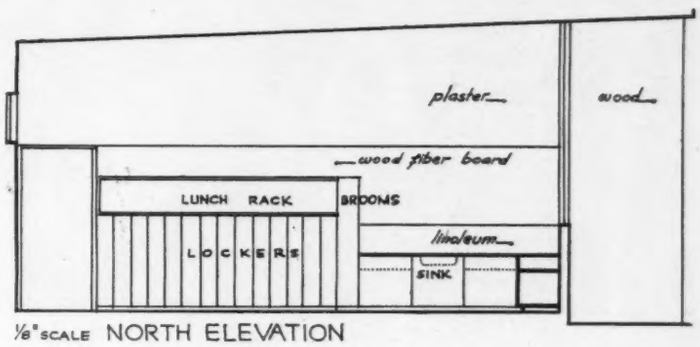


EAST ELEVATION

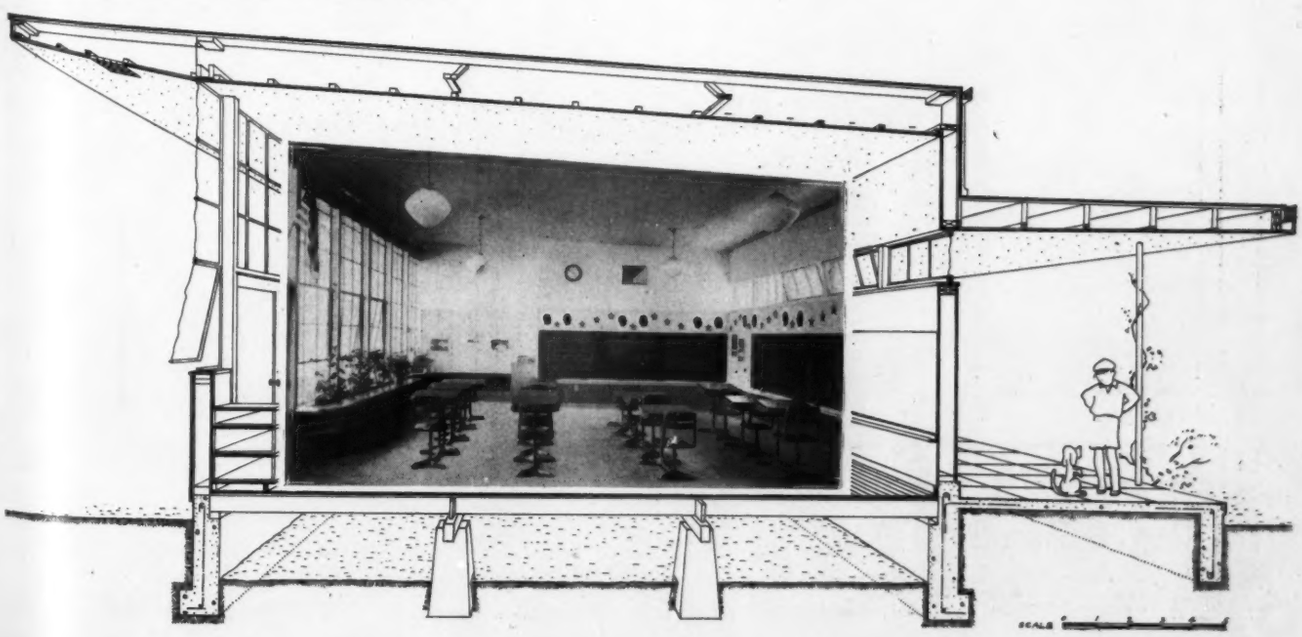


WEST ELEVATION





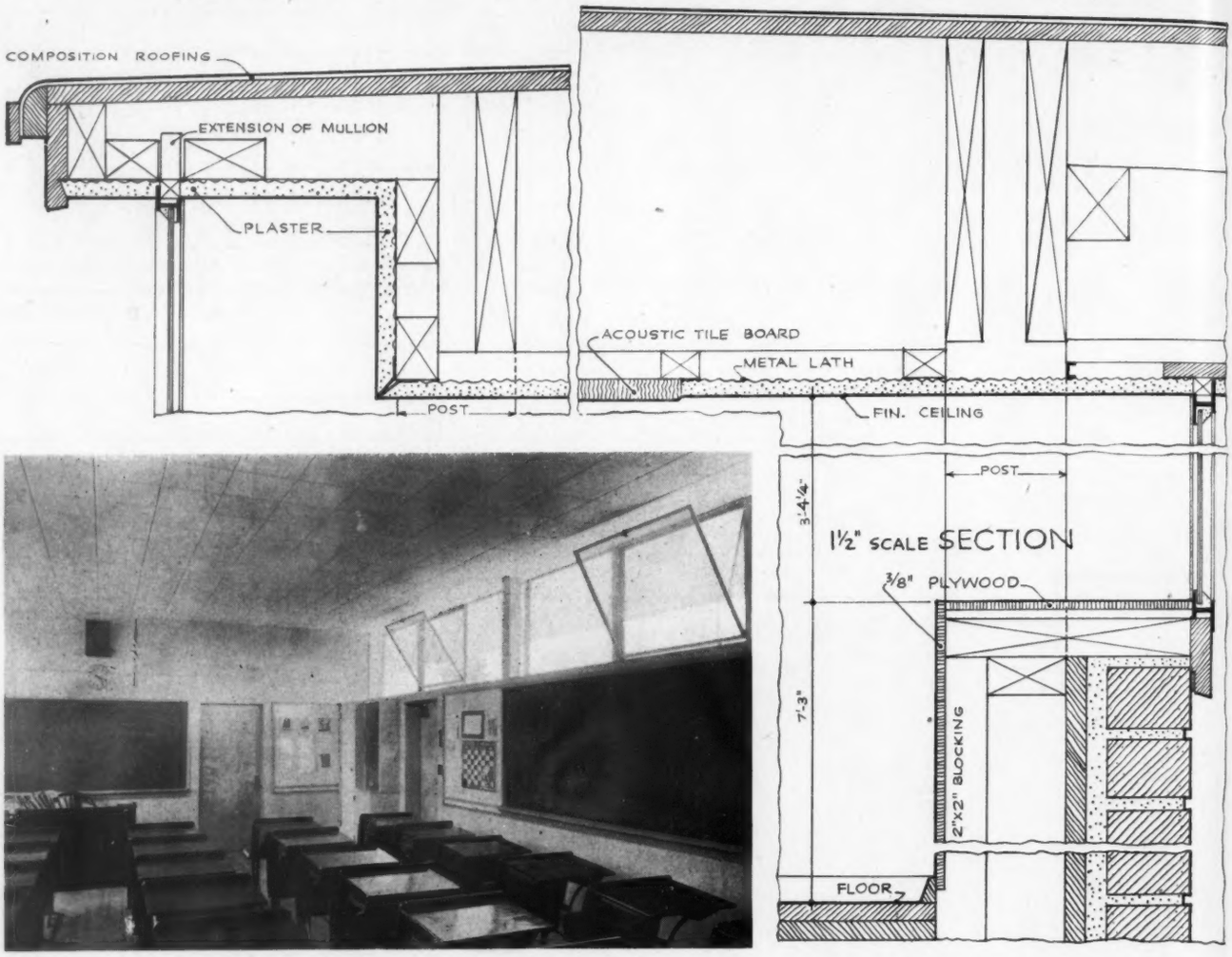
1/8" SCALE NORTH ELEVATION

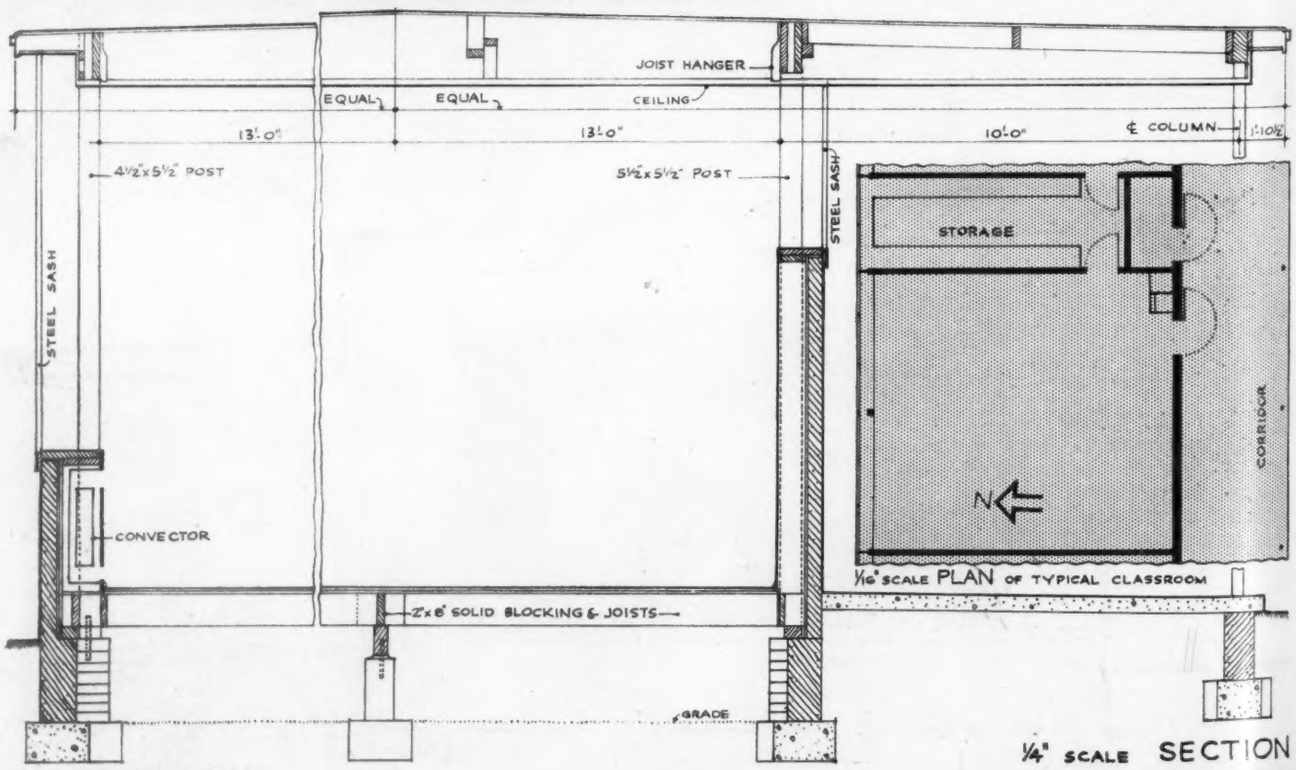


Selected Details

Typical Classroom, Ducor Elementary School; Franklin and Kump, Architects

Orientation to north, bilateral lighting made possible a room wider than it is long. Note steel sash applied to exterior wall faces, and simple structure, even though clerestory is below corridor ceiling. No activity area needed in high school classroom.





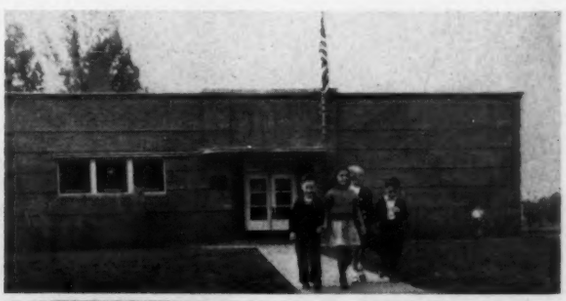
These Are Typical War-Built Schools

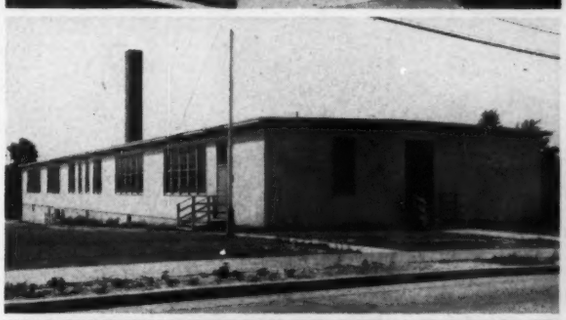
Federal Works Administration Projects Literally Dot the Land

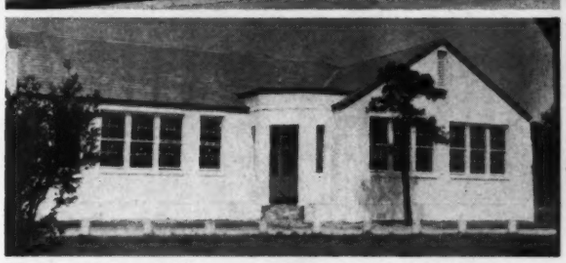
The ten schools below were selected, not quite at random, from quite a number available in the Federal Works Agency. All are War Public Works FWA projects designed and built as part of the program of works considered essential for the maintenance of civilian living standards. Some are temporary, some permanent. They come from many states, many types of educational districts, and they almost uniformly ignore the up-to-date standards for school buildings which this and other magazines have publicized in the last few years.

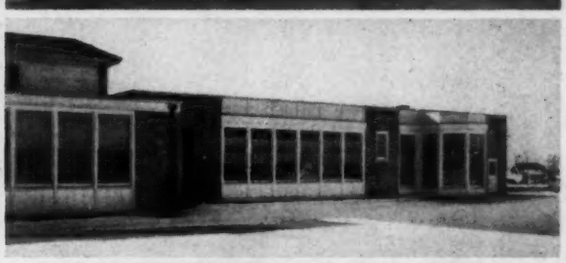
Quite rightfully, FWA is proud of the volume of such work, produced under war pressure. But in example after example one sees in it a seizing upon pressure of time, materials, etc., as an excuse for designing in the easiest way. Execution ranges in quality from moderately good to poor; it is in conception that they fail completely. Compare them with the Rugen School in this issue.

Photos below, first column, top to bottom: One-classroom bungalow adjacent to Emerson Grammar School, Burbank, Calif., Patterson School, eight classrooms, Washington, D. C., built of asbestos sheets and plasterboard; addition, Carolina Beach School, Wilmington, N. C.; addition, Forestville School, Forestville, Md.; six-classroom and gymnasium addition, Morrison High School, Warwick Co., Va. Second column, top to bottom: two-classroom, office, and heater room addition, Stark School, Livonia, Mich.; addition, Elementary School, Maple Grove-Rock Island, Ill.; four-classroom addition, Lordship School, Stratford, Conn.; eight-classroom Military Trail Elementary School, West Palm Beach, Fla.; new Plains Elementary School, Portsmouth, N. H. Architects' names are omitted partly because photographs were received just before going to press (FWA does not furnish such data unless specially requested), partly to spare the architects embarrassment.









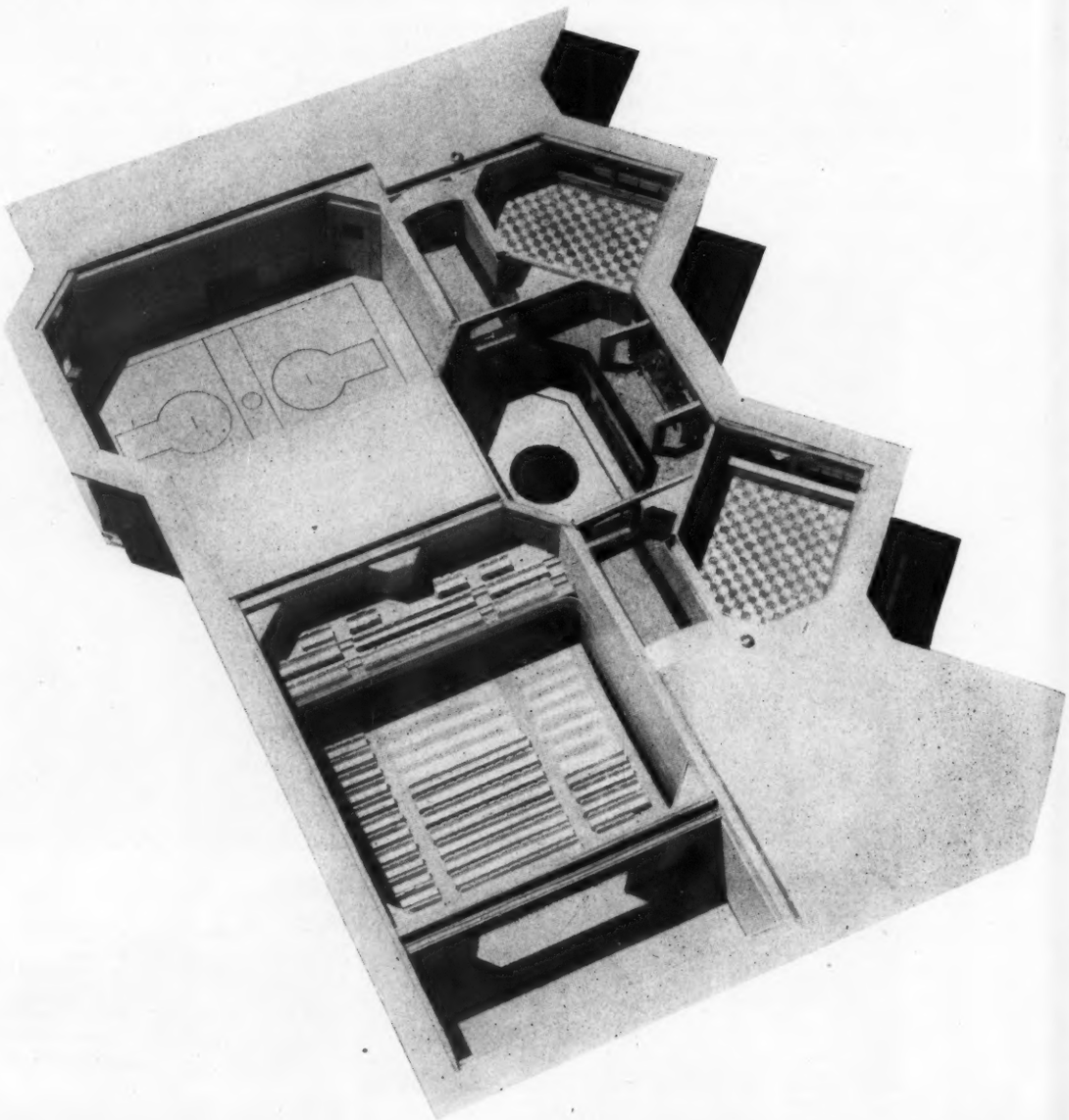
Study for a Postwar Elementary School

Childs and Smith, Architects

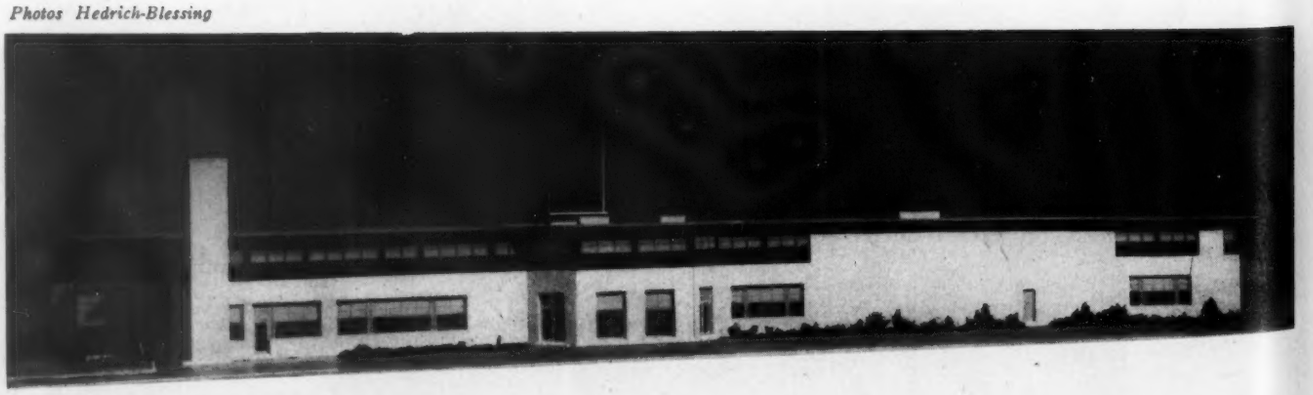
Say the architects:

"The school of tomorrow may well become the capitol of the neighborhood in which it is located, providing for civic and adult use as well as student activities. Should parents bring their children in helicopters in place of motor cars, larger sites will be needed in the country and roof decks for deplaning in our cities.

"More intensive development of sites will provide for outdoor class work in a variety of projects, including: gardening; animal and nature study; model and actual building construction; music and drama, all in addition to our former single use as play and recreational areas. This development may lead to part-time participation of older



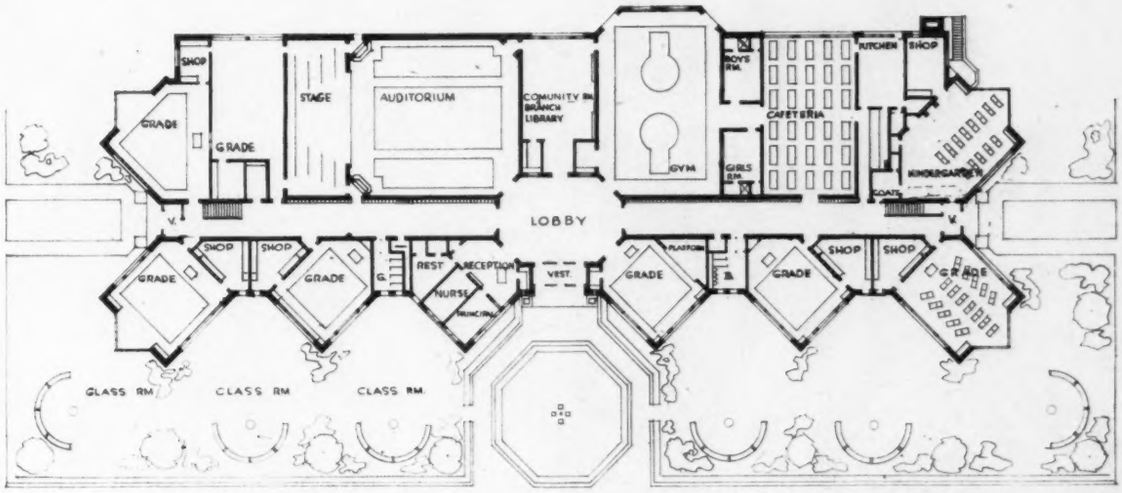
Photos Hedrich-Blessing



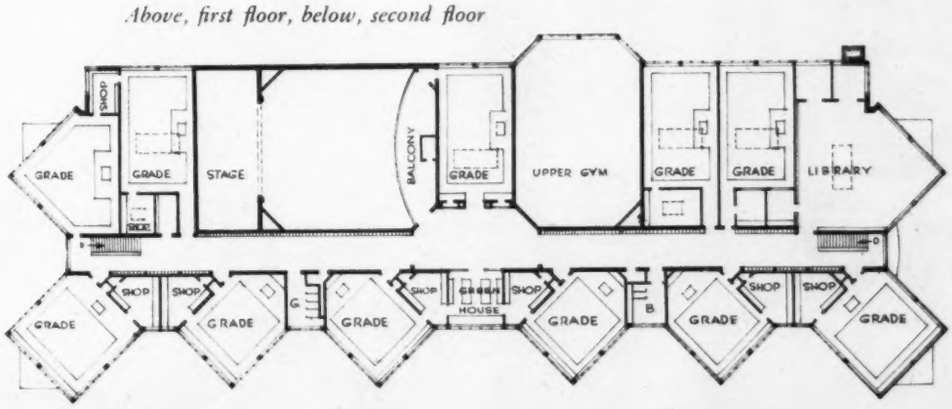
student groups on adjacent farms, in summer, and in factories in winter. Parks, brooks, and lakes may well form a part of our future school sites resulting in a richer life for young and old.

"Supplementing the gaiety of youth, our former dreary institutional structures will be replaced by an architecture of light, cheer, and color. Although built in a substantial manner for minimum maintenance, they will be far more flexible, with demountable interior partitions, standardized units of equipment as far as possible, that may be moved or replaced to suit the varying teacher needs and requirements. Many new materials (such as plywood, plastics, aluminum) will play a great part in providing more livable, sanitary, and cheerful classrooms. Color in new "Velon" rustless screens will be a great asset. Control of light by polarized glass may eliminate many headaches, actual and otherwise. Chemistry has gone a long way during the war and we may expect great development in both rubber and asphalt tile floors, as to durability and maintenance. Combination of plastics, asphalt and rubber will give us a grease-proof product more rigid and durable in every way. Provision of acoustic material will greatly lessen the noise nuisance in all parts of the school. Undreamed-of development of color and the redecoration of school class rooms, in paint, paper and murals, from year to year, as is customary in our homes, will add and retain greater charm for all ages.

"In the mechanical branches, greatly increased plumbing facilities will be provided. Practical development in fluorescent lighting will supply sunlight on cloudy days. Possibility of radiant heat, both solar and artificial, is in the offing. Air conditioning, in special rooms, at least, will relieve the torrid days of summer as in our cafes and movie theaters of today. Electrical units and window ventilation may replace our old cumbersome, expensive central ventilating systems."



Above, first floor, below, second floor

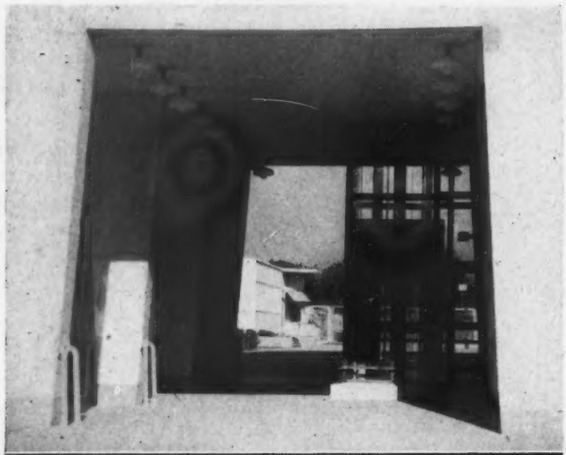


Below and on facing page, photographs of model

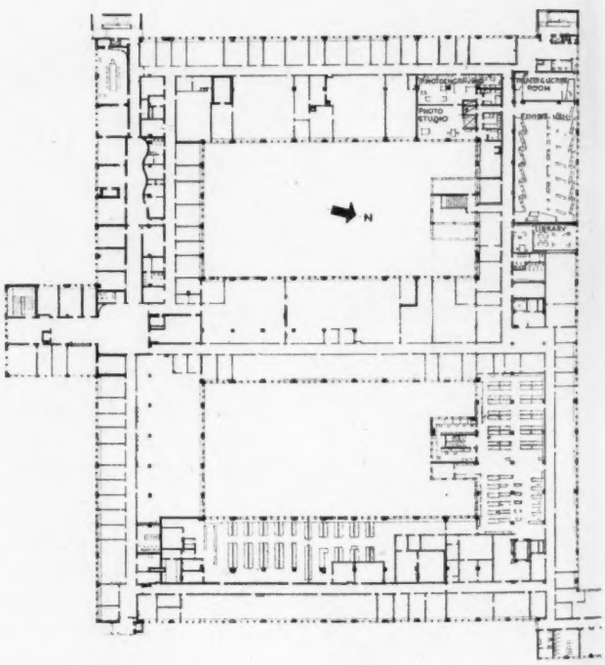
L. M. Ericsson Building, Stockholm, Sweden

Ture Wennerholm, Architect

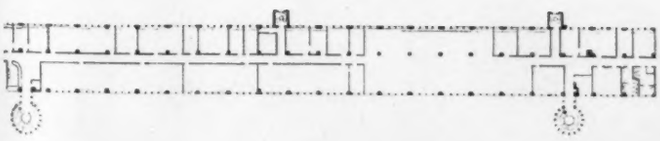
Photos: L. M. Ericsson from Simons



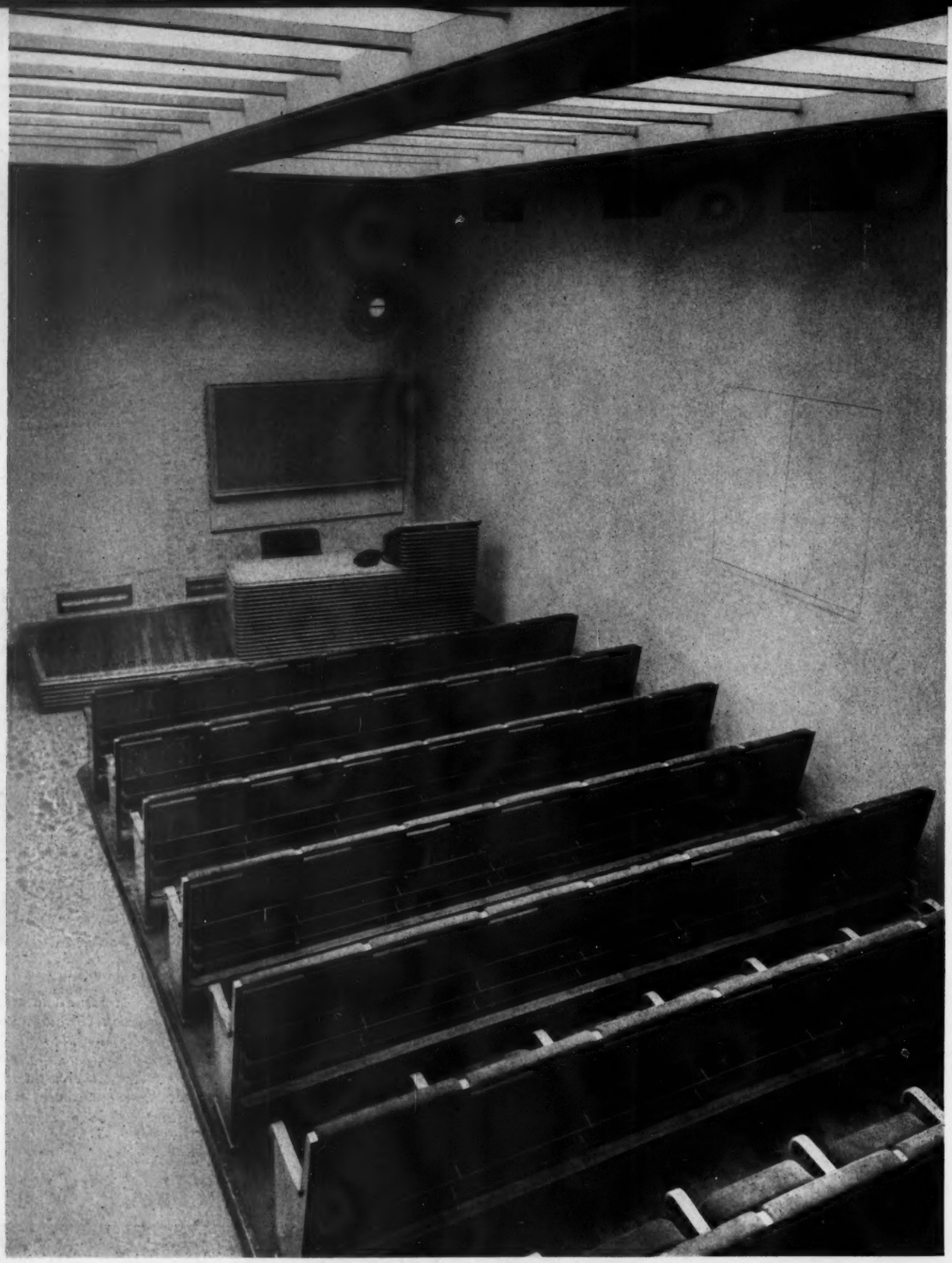
L. M. Ericsson manufactures telephone and communications equipment for shipment all over the world, a business which started in a small way in 1876. Until 1936, it conducted its affairs inefficiently in widely scattered plants. In that year, the company called in Ture Wennerholm, official architect of the State Building Commission and designer of one of Stockholm's first modern office buildings, of the Tennis Stadium, and of the Swedish Match Building. Much study in Sweden and abroad preceded actual planning; the process of consolidating many small plants and offices was tremendously complicated. Construction was started on the site in an outlying district of Stockholm in March, 1938; by April, 1940, some factory departments were installed; by November of that year the plant was in full swing.



Plot plan on page 75 shows the extent of site development, felt necessary because the great number of employees forms an almost distinct community. The one-story wing at right houses guards' and porters' lodgings. Ground floor of main building contains shipping offices and some shops. Other precision shops are on the second floor; third floor: offices, laboratories, lecture hall, exhibit hall, photo studio, executive suite; top floor: dining rooms, lounges and reception rooms for executives. Roughly, the site covers a million square feet; the main building is 724 ft. by 426 ft. Much attention was paid to heat and sound insulation and to intercommunicating and operating devices.



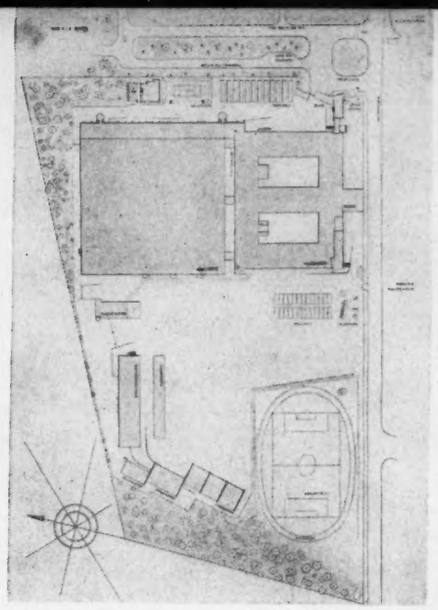
Above, exterior, suite of executives' dining rooms, each with small balcony. Below, main facade. Left, typical (third) floor plan.. Facing page, top to bottom: Entrance portico, housing operatorless elevator, supervised by photo-electric cell; executives' entrance stair, with air inlets penetrating the sound-insulated ceiling; pool in executives' roof-top dining suite.



The L. M. Ericsson building is the largest built in Sweden in years, possibly the largest non-military structure recently completed in Europe. It is of reinforced concrete and steel, with aerated concrete insulation on exterior surfaces. Expansion joints divide the building into units 131 by 230 ft., except for the machine hall, which has a monolithic ceiling, 377 by 413 ft. The entire plant is designed for flexibility of space use except for necessary fire walls. Great expanses of windows make the interior light and airy. Ceilings are finished with perforated tile, through some of which conditioned air is blown into the rooms. Floors are linoleum.

Elevators are automatic, operated by photo-electric cells, and are said to ascend, open their doors, descend, etc., without any pushing of buttons. (Our correspondents have not told us how this is done!) Just inside the door of each executive's office is a telephone dial. An official who visits another office than his own ticks off his own number as he enters, thus informing the telephone operator of his whereabouts.

Cooperating with the architect were Astrid Sampe-Hultberg, textile designer who designed and installed fabrics; and Ewald Dahlskog, who designed an intarsia mural in the board room. Photo above is of the lecture room which has a projection booth and is acoustically designed.



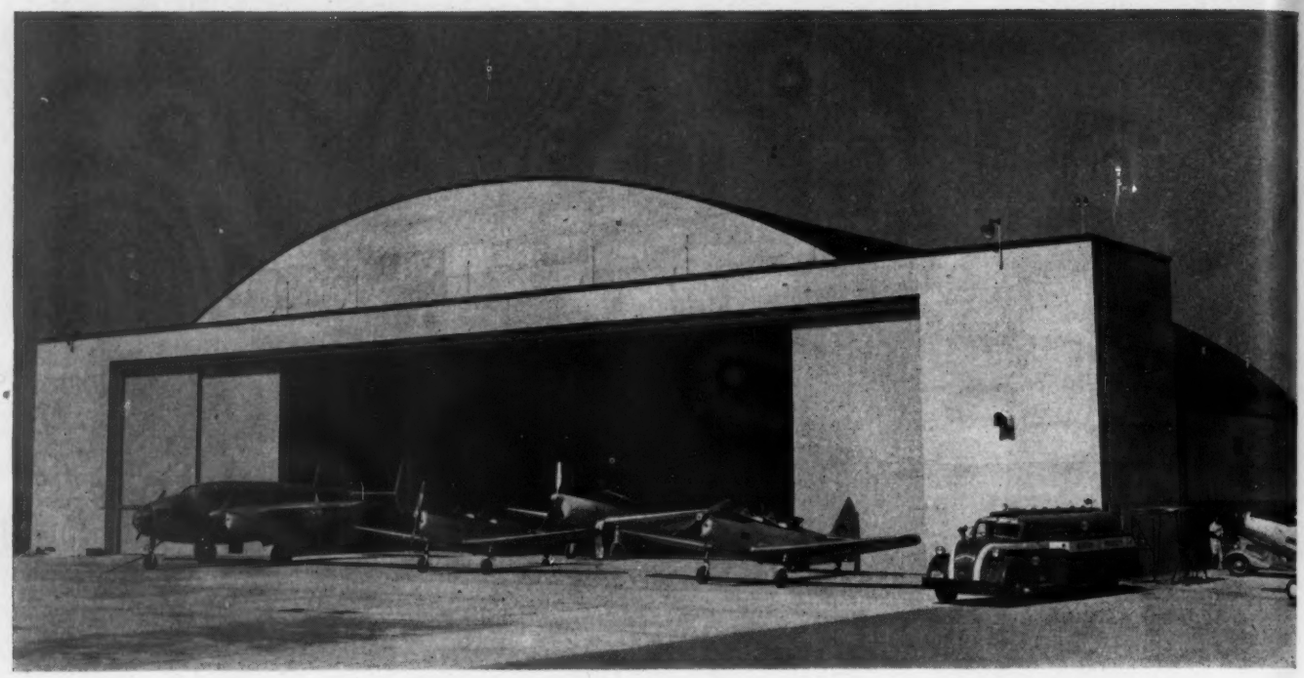
At left, site plan, showing community facilities provided. By utilizing natural ground slope and blasting parts of the rocky site, a subterranean portion of the building was made possible. This contains storage room, air raid shelters, a garage, and dressing rooms for employees; elevators and stairs take them to their work.

Photos below: top row, left to right: Main entrance hall, executives' floor, with serpentine desk and cylindrical glass telephone kiosk for visitors; 300-ft.-long drafting room. Center row left, executives' lounge with free-standing fireplace; right, executives' dining room. Bottom row, left and right, two views of employes' dining rooms—two rooms which can be thrown together by a sliding partition, and which feed 4,000 employees daily.

Photos: Nordiska Kompaniet, by Holmén, from Korch

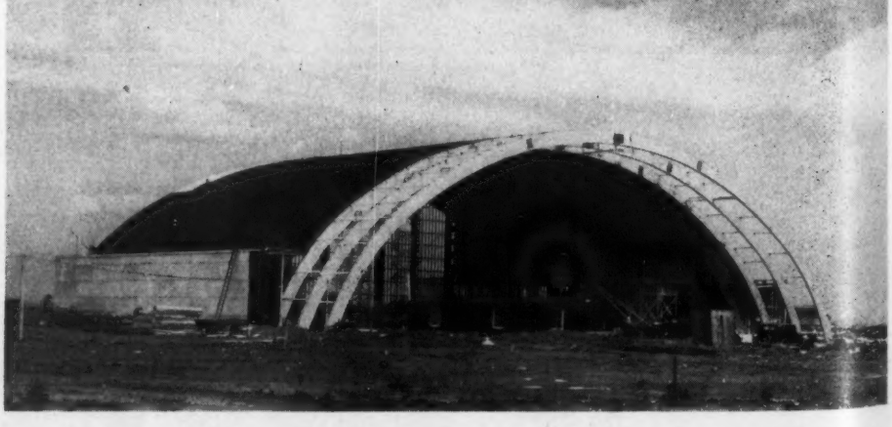
Wood Hangar, Hagerstown, Md.

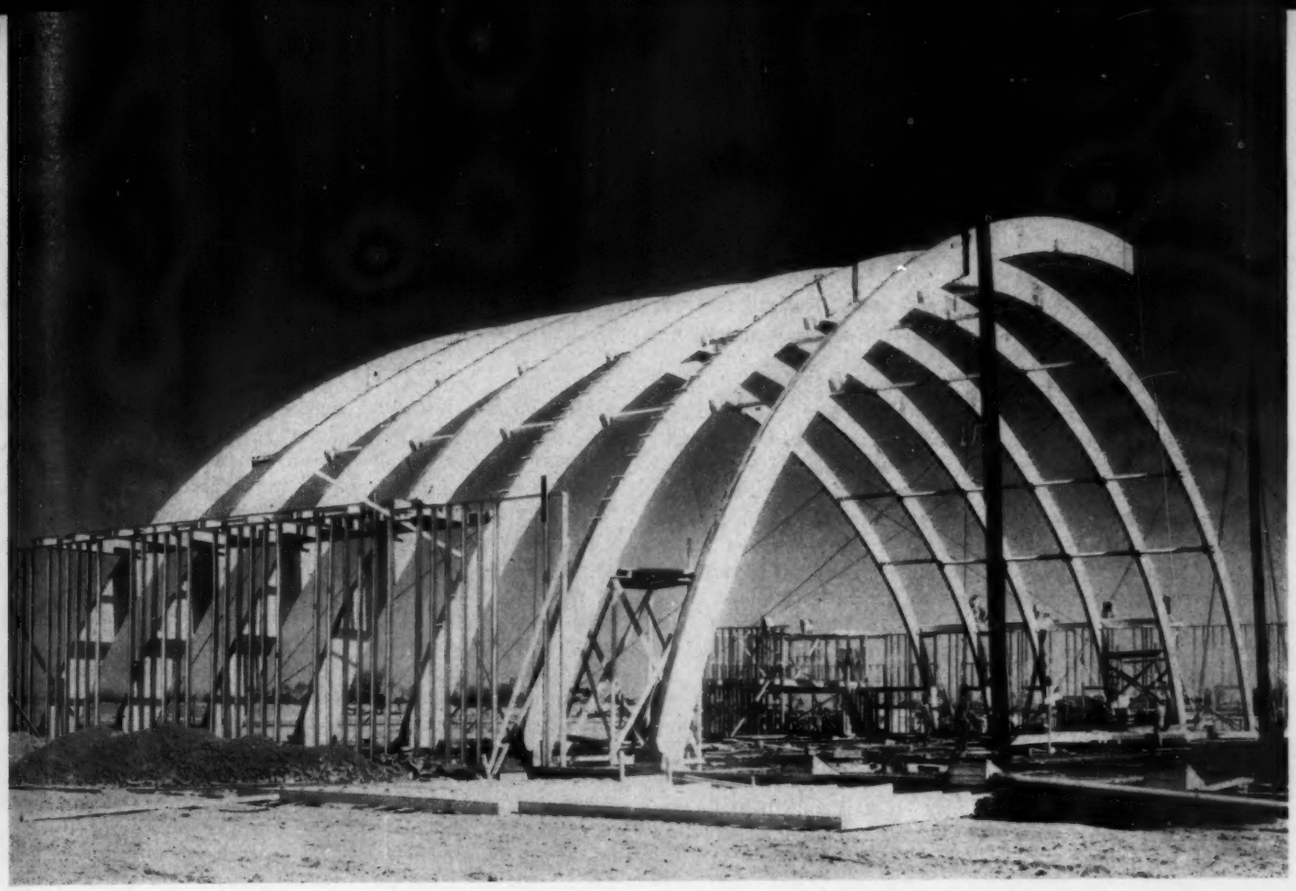
Albert Kahn Associated Architects and Engineers, Inc.



Completed Fairchild planes now roll out the factory doors into an unusual wooden hangar which has just been completed near the main assembly plant of Fairchild Aircraft Division of Fairchild Engine and Airplane Corporation on the municipal airport at Hagerstown, Maryland. Believed to be one of the largest of its kind in the country, this hangar has been built of laminated yellow pine arches, measuring 170 feet across. It is 120 feet long.

Every conceivable convenience, commensurate with war-time economy, has been incorporated into the structure. With a capacity of 35 Fairchild PT-19 trainers, provision has also been made for a flight test office, airplane and engine shop, parts stockroom, Army Air Forces inspection office, Air Transport Command dispatching office, pilots' lounges for both men and women, ready room, showers and rest rooms. These quarters have been built into a two-story structure which forms the north side of the building. For servicing planes in the large hangar there have been built into the concrete floor three parallel ducts carrying 110, 220 volt and hi-cycle current as well as compressed air lines. These lines are accessible from any part of the floor. Steam heat is piped into the building from the main plant. Air is pulled up through steam heated radiators and dispersed by large blower units, thus converting strong steam heat to temperate heated air. Direct incandescent lighting is used for general illumination with portable fluorescent fixtures available on the floor for detailed work on planes whenever needed.





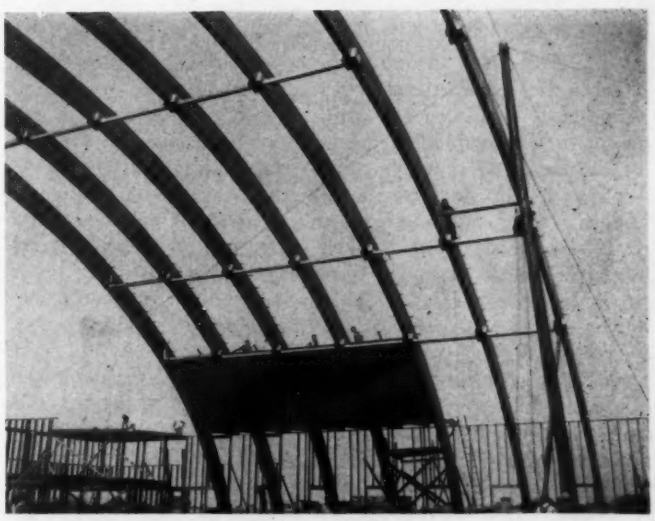
The Fairchild hangar contains many innovations in construction plus some new uses of pre-war building practices. The bottoms of the arches are joined by 1″ rods. Strips of 1″ x 8″ yellow pine, laminated and glued, form huge arches. Each arch has 48 of these strips, which were built up as a unit from the inside radius to the outside in large jigs. Each arch consists of four sections which are butt-joined and held in place by four metal splice plates 5/16″ thick. The maximum height of the arches is 48 feet along the center of the building. Arches are placed 10 feet apart and are covered with 2-inch tongue-and-groove lumber, which in turn is surfaced with asphalted sheets, gravel-finished for protection.

Wood studs, size 2″ x 6″, frame the sides of the building, are covered with vapor-sealed insulation board. Asbestos sheets, ¼″ thick, butted along vertical joints and lapped horizontally, form the outside surface of the sides.

Horizontal wind and racking loads are taken up by a large truss built into the foremost bay of the hangar. To the bottom of this truss at the front are attached the door guides. The doors, designed by Fairchild engineers, are each 17′ x 27′ and are made of a series of ¾″ x 5¾″ vertical and horizontal members, covered by ⅜″ plywood, glued and nailed to both sides of the frames. Doors operate on rollers over tracks embedded in the concrete floor and are manually opened and closed. When open, the eight doors are in "pockets" at either side of the front of the building. Ten red obstruction lights are placed along the roof and on the top sides of the hangar.

A concrete apron in front of the building, 170′ x 130′, is used as a storage and service location. It has steel tiedown rings embedded in cement and outlets for electric current.

This type of construction uses less material in the roof support and permits a greater span.



Photos on facing page: top, completed hangar; bottom, structure nearly complete. This page: top, erecting the laminated wood arches in four sections each; center, roofing of 2-in. tongued-and-grooved lumber being placed on the arches; bottom, rigid truss in front bay to take wind and racking loads.

Discussions on Urbanism

This is the seventh installment of the reports of seminar discussions held by the Planning and Housing Divisions, School of Architecture, Columbia University. Concluding installments will be published later.

14 Urban Redevelopment, by Carl S. Stern, Lawyer; Counsel for Long Island State Park Commission, State Board of Housing; Board of Directors, Citizen's Housing Council; Member Committee on Slum Clearance; Chairman of legislative subcommittee drafting New York Housing Authority Act.

Continued from the August issue

We may pause for a moment to consider the methods of control. Control over projects may be continuing, like the control public utility commissions have over public utility companies, railroads, and telephone and radio companies. Or it may be embodied in a contract which redevelopment companies undertaking a particular project may make with a local community. In the recently passed amendment to the Redevelopment Companies Act, New York has provided for the ownership and operation of a project by a redevelopment company, which is subject to a certain amount of regulation. But the Act provides that if the redevelopment company surrenders its tax exemption, and pays back the taxes saved, or if the tax exemption comes to an end, the restrictions on its operation in the public interest cease unless otherwise provided by contract with the city. In short, here is a concern that is only partially run on the public utility principle but may step out from regulation upon termination of tax exemption.

The Redevelopment Companies Act as amended provides for the use of a contract with the community as the method of regulation. It seems to me that this form of regulation is to some extent illusory. It protects neither the company nor the public. The project is subject to the police power of the State. If the practices of a redevelopment company dealing with large numbers of people should cease to be in accordance with the mores of the community, the State might change the situation by legislation affecting all publicly aided projects. Nor is the contract system good for the community, for since change is the only thing that is certain, vital interests of the community may be adversely affected if the community is straight-jacketed by an ill-advised contract. The continuing power of regulation is the most effective way to insure operation in the public interest.

Primary in the considerations of urban redevelopment is the problem of the assemblage of land. This may be divided into two major questions: the assembly of parcels of land and the clearance of the site; and land costs or values.

It it rare to find contiguous pieces of land all ready for development. It is more common to find a pattern in which good and bad buildings alternate in the same area, and where very few parcels are under single ownership. In order to insure a satisfactory area for clearance and development it will be necessary to acquire parcels of land. In order to insure acquisition there must be available the power to take by eminent domain.

Limitations on the power of eminent domain are twofold: those imposed by the Constitution of the United States and those imposed by State Constitutions. Under both, land may be taken only for a public use and upon payment of just compensation. We may assume that clearing up blighted areas is a public use, and that if taking land furthers the harmonious development of a city, it will be sustained as a taking for public use.

But under the Constitution of the State of New York, there is a different question. The New York constitution allows the Legislature to grant the power of eminent domain "to any city . . . to any public corporation, and to any corporation regulated by law as to rents, profits, dividends, and disposition of its property or franchises, and engaged in providing housing facilities." In so doing it has followed a pattern heretofore known, of granting the power of eminent domain to public bodies *and* to *public utility corporations*. If the Redevelopment Companies Act had granted the power of eminent domain to a corporation that was not limited as to rents, profits and dividends, the law would be in this respect unconstitutional. If it had granted it to a corporation that could immediately step out of the restrictions, a serious question would be raised whether this was a proper case for delegating the power of eminent domain. The Act grants the power of condemnation to the City. For the City to exercise that power for the benefit of a concern that is not subject to regulation, or that can step from under regulation at any time, will undoubtedly raise a question that the courts must settle. This is particularly serious under the amendment to the Redevelopment Companies Act, for the amendment makes redevelopment under the Act a "superior public use"—that is, the city may condemn for the redevelopment company property already employed for a public purpose such as school buildings, railroads, and the like. Regardless of the decision of the courts, the question still remains whether it is a sound public precedent to have the power of eminent domain used to create private housing projects that may be a law unto themselves. Gramercy Park, the only private park in New York, is a delightful spot. But there would undoubtedly be great public clamor if eminent domain were to be used to create another Gramercy Park.

Many people feel that the rehabilitation of cities is rendered difficult if not impossible because land costs "are so high that redevelopment for private or public use is out of the question." And in the Uthwatt report it is stated that the cost of sites is so great as to prohibit "their use for the erection of working class houses" other than by subsidized projects.

There is no question that the price tags placed on land by New York City, through assessed valuations, are high. Frequently they are out of proportion to their market or any economic value. The Real Estate Board in a statement published in 1942 said that in New York City there were 2,417 sales at an average of 63.8% of their assessed value. In private conversation with an official of one of the large savings banks, I was told that recently their average sales for cash were at 47% of the assessed value. The New York Sun frequently records sales of parcels at less than 47% of the assessed value.

In reorganizing corporations under modern methods, the Court would simply squeeze out the water—that is, the difference between the capitalization and the sound economic value of the property of the corporation in reorganization. It did this recently in the second reorganization within a generation of the Chicago, Milwaukee and St. Paul, where it wiped out not only the preferred stock and the common stock but, in addition, a hundred million dollars worth of bonds. When, however, we come to urban land values and the difference between economic value of land and its assessed valuation, we encounter a different problem. Professor Spengler spoke about the necessity for revising New York City's tax structure and has indicated possible methods of bringing tax assessments into line with reality. But until there are substantial modifications, anything like a realistic valuation of New York City real estate is likely to be impossible of achievement for many reasons.

(a). The greater part of the borrowing power of the city is limited to ten percent of assessed valuation. The city would be tremendously hampered by a reduction in assessed valuation since the kind of debts affected by the debt limit provisions are now $1,433,604,293 against an assessed valuation of $16,115,642,742.

(b). The city's current expenses other than debt service must be kept within two percent of assessed valuation. Since the city is now suspending 1.838% of the assessed valuation, if valuation were cut in half there would have to be a material cut in present expenditures.

(c). In the past, purchases and loans upon property were made with the assessed valuation in mind. These transactions have run into large figures. Many loans are held by insurance companies and savings banks.

(d). If an attempt is made in eminent domain proceedings to take a man's property, he is theoretically entitled only to the market value—what a willing purchaser will pay a willing seller. Now, despite sales at less than half the assessed valuation, the courts (in eminent domain proceedings) tend to have the award somewhat approach the assessed valuation. And they cannot be harshly criticized for this because the land owner has been paying taxes not upon values established by the current market, but upon a basis fixed by the community. It is one thing for a man to take a loss in U.S. Steel common; the community has had nothing officially to do with establishing its value. But the law requires the community to base tax assessments on the value of the property taxed, and it is on those assessments that the taxpayer makes his contribution to the city's support. It seems unlikely that if eminent domain is to be employed to acquire land, the price that the courts will require the purchaser to pay will be much less than the assessed valuation.

There are minor expedients that may keep the cost of land assemblage down. Communities may set up land reserves. Tax delinquent land may, under appropriate methods, be taken over by the city and exchanged for other land in areas sought to be developed. Something of this sort was done in Syracuse. Streets may be closed in exchange for private concessions. A police power strongly enforced may result in demolishing improper structures. Condemnation techniques may be somewhat improved and, in line with a recent decision of the Supreme Court, there may be, to some extent at least, values frozen as of the time a particular project is launched. Some people have fostered the idea that blighted areas should be permitted to rot their way out until they are so valueless that they can be taken for practically nothing. I question whether anyone can seriously make that suggestion as a practical matter.

The most radical and far-reaching suggestion is the Hansen-Greer proposal that local governments buy up blighted areas and slums by condemnation when necessary. Thereafter the communities would lease such land as was not required for public purposes to private or public enterprises for redevelopment in accordance with a master plan. Costs of acquisition would be kept as low as possible by the bargaining power of local governments or decisions of the courts in condemnation proceedings. But the proposal would ignore the cost of land in fixing the ground rents for the leased land. These rents would be based solely upon the estimated earning power of the land under the new lease. Assuming that local communities might be unable to raise the money to purchase the land, the proposal suggests that the federal government might advance money and be repaid solely out of the projects' earnings. If earnings were insufficient, the excess would be written off as the cost of remedying a national evil. As in the case of reorganizing private corporations, this program would involve writing down land values to their economic values in the projects affected. Unlike the reorganization of private corporations, whatever loss there is would be borne by the community instead of the individual owner. To the extent that the land owner would be over-paid, this would be a subsidy.

The methods to be adopted will depend upon the kind of development; whether the project is to be built by a private corporation, by a public utility company, or a public agency. The Uthwatt report looks to leasing land, not sale. Three plans much discussed in this country, the so-called Hansen-Greer plan, the FHA plan, and the Urban Land Institute plan, envisage creating a public agency which will acquire the land and will then either lease, as under the Hansen-Greer or FHA plans, or lease or sell as provided by the Urban Land Institute plan.

New York has implemented in its laws various possibilities. The result is something of a hodge-podge; laws with differing controls and controlling bodies govern public housing, limited dividend housing, and leasing by cities of their land, giving rights to regulated corporations, subject to certain controls, to mortgage the fee of the land. More recently there has been the Redevelopment Corporation Act which provides for owners in a particular neighborhood getting together and replanning their neighborhoods with certain compulsory powers over the neighbors who will not come in voluntarily. Finally there has been the Redevelopment Companies Act with the recent Hampton-Michell Amendment which looks to the handling of segments of redevelopment projects through corporations subject to some regulation.

Large amounts of public and private funds should be available for redevelopment purposes after the war. The national income will probably continue at a high level. It is unlikely that the colossal budget of the United States will drop to the prewar basis. Investing institutions will have funds seeking investments. Private concerns will have large reserves of capital. There will be substantial private savings.

The question of the form that financing will take will largely depend upon the methods adopted. There should be no difficulty in obtaining debt capital, the question of getting equity capital—the capital that will take risks—should be affected by the amount of controls over operations and profits. Controls may actually limit profits. If there are thorough controls it may be impossible to interest private concerns on a profit basis. But this does not eliminate private enterprise or private capital. Private architects and builders may be employed. Many projects may be leased or sold to concerns with few restrictions. Others, such as housing projects, may need more thoroughgoing controls. It is conceivable that equity capital may be furnished by municipalities as, for example, is done in public housing developments where the project is owned by the housing authority and only the debt securities are sold to the public. There have been suggestions that if private capital be employed it come in on an investment, not a speculative, basis, and that a certain small return be guaranteed with the possibility of limited earnings in excess however of the guaranteed return.

Urban development can be achieved only if the public is determined to have it. If there is such a determination, no real obstacles will stand in the way. We have no adequate statistics as to cost. Investigation may show that a substantial part of the cost can be amortized out of economic savings that may be achieved by redevelopment. But if communities are determined that their future life and the health of their citizens demand substantial reconstruction of the community, it is unlikely that cost alone will be an insuperable obstacle. People go to great lengths to obtain what they have determined they need. The Maginot Line is said to have cost $500,000,000. In February,

Discussions on Urbanism

1943, the New York Times stated that the present war was costing the United States over $253,000,000 a day.

Perhaps public opinion can not be crystallized until a committee of Congress, or some public body, makes the kind of public investigation and report that has preceded other great reforms such as that in the insurance industry, railroads, and public utilities. The Urban Land Institute, an off-shoot of the National Association of Real Estate Boards, recently urged Congress to establish a committee to study proposals for postwar urban redevelopment, and Senator Taft has introduced a resolution asking for a committee to study the work of the NHA and to recommend a program of postwar activity in housing.

An authoritative study and report that will do for America what the Uthwatt report may do for England, crystallize public sentiment, would be the surest foundation for a real program instead of mere patchwork plans which tend to perpetuate or repeat errors of the past.

The accompanying charts were compiled by the author, Carl S. Stern, and were found to be extremely valuable in the course of the seminars at Columbia University. The Editors are grateful for permission to include them here.

CURRENT PROPOSALS FOR POSTWAR REDEVELOPMENT OF BLIGHTED AREAS (1943)

(From The Urban Land Institute, Washington, D.C., News Bulletin No. 8, August 1, 1943)

	Urban Land Institute Plan	Greer-Hansen Plan	F.H.A. Handbook Plan
Land Acquisition	By a "local land commission" operating under a federal charter, with state sanction, having power of eminent domain, with authority to reconvey properties for private redevelopment.	By "the local government" under state authority to assemble land for private redevelopment through the power of eminent domain when necessary. (An unspecified type of local agency is contemplated.)	By a "city realty corporation," a corporate arm of the city, authorized by state law to acquire land for lease to approved private redevelopment corporations.
Jurisdiction of Land Assembly Agency	The metropolitan area as defined by the U. S. Bureau of the Census.	The metropolitan area.	The urbanized area.
Funds for Land Purchase	Federal loan to the local land commission.	Federal advances to the city.	Funds derived from sale of properties taken for tax delinquency, and funds borrowed by the city realty corporation (against credit of property acquired, and not against general credit of the city).*
Cooperating Federal Agency	A "federal urban land commission" established within the National Housing Agency.	National Resources Planning Board and National Housing Agency in planning matters. "Appropriate federal agency" in financial assistance.	Various agencies of the federal government.
Reconveyance of Land for Private Redevelopment	By sale or lease to private builders or redevelopment companies.	By leasing to private enterprise.	By lease to redevelopment corporations.
Planning for Redevelopment:	Redevelopment in accordance with a master plan.	Redevelopment in accordance with a master plan.	Redevelopment in accordance with a master plan.
Funds for Planning	Local funds supplemented by grants from the Federal Urban Land Commission.	Advances and technical aid for planning when necessary.	Local funds.
Area to be Planned	Metropolitan area as defined by the U. S. Bureau of the Census.	Metropolitan area as determined for each city.	Metropolitan area.
Administration of Plan	Over metropolitan area.	Over metropolitan area.	Within corporate boundaries of city.
Planning Agency	Local land commission.	Metropolitan planning commission.	City planning commission.
Taxation of Redeveloped Properties	Land sold, and leasehold value of land leased by the local land commission, and all improvements to be taxed at the prevailing city rate; assessed values of land sold and leased by the commission to be on the basis of reconstituted use values.	Improvements to be taxed; ground rents for land would include payments to the city equivalent to taxes.	The city realty corporation would "pay taxes on property that produces revenue."

*The realty corporation could also act on behalf of the city "in making fiduciary and other contracts with agencies of the state and federal government, relating to the acquisition and financing of sites duly selected for rehabilitation."

Each of the three plans contemplates that:
The local land assembly agency will acquire land for public purposes, as well as for private redevelopment.

In reconveying land for private redevelopment the local agency will have authority to disregard acquisition value when the establishment of a lower value is necessary to put the land to its most beneficial and appropriate use.

Redevelopment will be governed by adequate safeguards and controls exercised by both federal and local authorities.

ANALYSIS OF NEW YORK STATE LAWS RELATIVE TO URBAN REDEVELOPMENT (1943)

	HOUSING AUTHORITY	HOUSING COMPANIES	REDEVELOPMENT CORPORATIONS	REDEVELOPMENT COMPANIES
GENERAL POWERS	To provide for low cost housing: erect, operate, maintain, including offices, social, recreational, communal, or other non-housing facilities deemed appurtenant.	To provide for low cost housing: acquire, construct, maintain, and operate, including very limited commenal facilities.	To clear, replan, rehabilitate, or reconstruct substandard or insanitary area, including erection of industrial, commercial, residential, or public structures and facilities deemed appurtenant.	To clear, replan, reconstruct, modernize substandard and insanitary areas; and provide adequate, safe, and properly planned dwelling accommodations and such business, commercial, cultural, or recreational facilities deemed appurtenant.
LIMITATIONS ON EARNINGS		6% on stocks and debentures. (5% on mortgages).	Maximum earnings 5% of redevelopment costs.[1]	6% of development costs.[1]
LIMITATIONS ON RENTS	Authority limits rentals to make applicable to income groups not supplied by private enterprise.	Maximum rentals prescribed in the law.	To be approved in redevelopment plan.	Regulated by contract with city.[2]
WHO PLANS	Planning commission or the local legislative body.	The company with approval of State Commissioner of Housing and in conformity with planning, zoning, sanitary, or building laws of the municipality.	Planning commission.	Planning commission or local legislative body. (In New York City, the planning commission.)
WHO CONTROLS	Authority, with criticism and suggestion of State Commissioner of Housing who must approve changes in project.	State Commissioner of Housing, who has right of designee on board of housing company.	Supervising agency (in New York City, Board of Estimate) who has right of designee on board of redevelopment corporation.	Supervising agency (in New York City, [a] Comptroller or [b] — if equity securities issued to insurance companies — Superintendent of Insurance).[2]*
CONTROL OVER OPERATION		Commissioner has control over tenant selection, salaries, accounting, contracts for maintenance, etc.	Supervising agency and planning commission may set certain standards. Salaries limited by plan; rentals to be approved in plan, supervising agency controls accounting provisions.	Control over contracts for salaries, construction contracts and improvements or operation, accounting and operation practices.[2] Control over rentals, regulated by contract.[2]
WHO MAY INVEST IN EQUITY SECURITIES	(Housing Authority may sell bonds.)	Insurance companies provided all stock has been issued to insurance companies. Savings banks — if all stock has been issued to savings banks and if not more than 3% of the assets of the bank.	Insurance companies and banks may sell any real property in the area developed by the corporation and take stock in exchange.	Insurance companies and savings banks may sell any real property within area developed by the company and take stock in exchange. Insurance companies may own the stock of a redevelopment company.
CAPITAL STRUCTURE		Mortgage money up to 66⅔%. Equity securities must equal at least 33⅓%.	No restriction on size of mortgage. First lien mortgages legal for savings banks and insurance companies.	No restriction on size of mortgage. First lien mortgages up to 80% are legal for savings banks and insurance companies. Equity securities must equal at least 20%.
CONDEMNATION[4]	By authority.[5] By the city, on petition from the authority.	By housing company on certificate from commissioner.	By corporation,[5] on certificate of approval of condemnation by supervising agency. By city[5] on certificate of approval of condemnation by supervising agency.	By city.[5] and[6]
TAX EXEMPTION	Projects except state projects are tax exempt but city may fix or agree to sum to be paid in lieu of taxes. State projects: value of property over assessed valuation is exempt.[3] Maximum — 50 years.	Projects completed before 1939 may be exempt from local taxes. Projects completed 1939-1949: cities may exempt to extent of increase over assessed valuation.[7] Maximum — 50 years.	Projects may be exempt from any increase over assessed valuation for ten years.	Property may be exempted from any increase over assessed valuation for twenty-five years.

*Planning commission — approval of plan.

[1]Under a cost-plus 5% or 6% provision, the earnings may be substantially in excess of 5% or 6% of capital investment in the event that mortgage and equity money are not supplied by the same person.

[2]Where the insurance company wholly owns the securities of the redevelopment company, control is regulated by contract with the city under the Superintendent of Insurance and not under the supervising agency. All controls cease on approval of the contract except those provided for by contract. All controls cease under supervising agency or contract on expiration of term specified in contract or election by company to pay back prior tax benefits received.

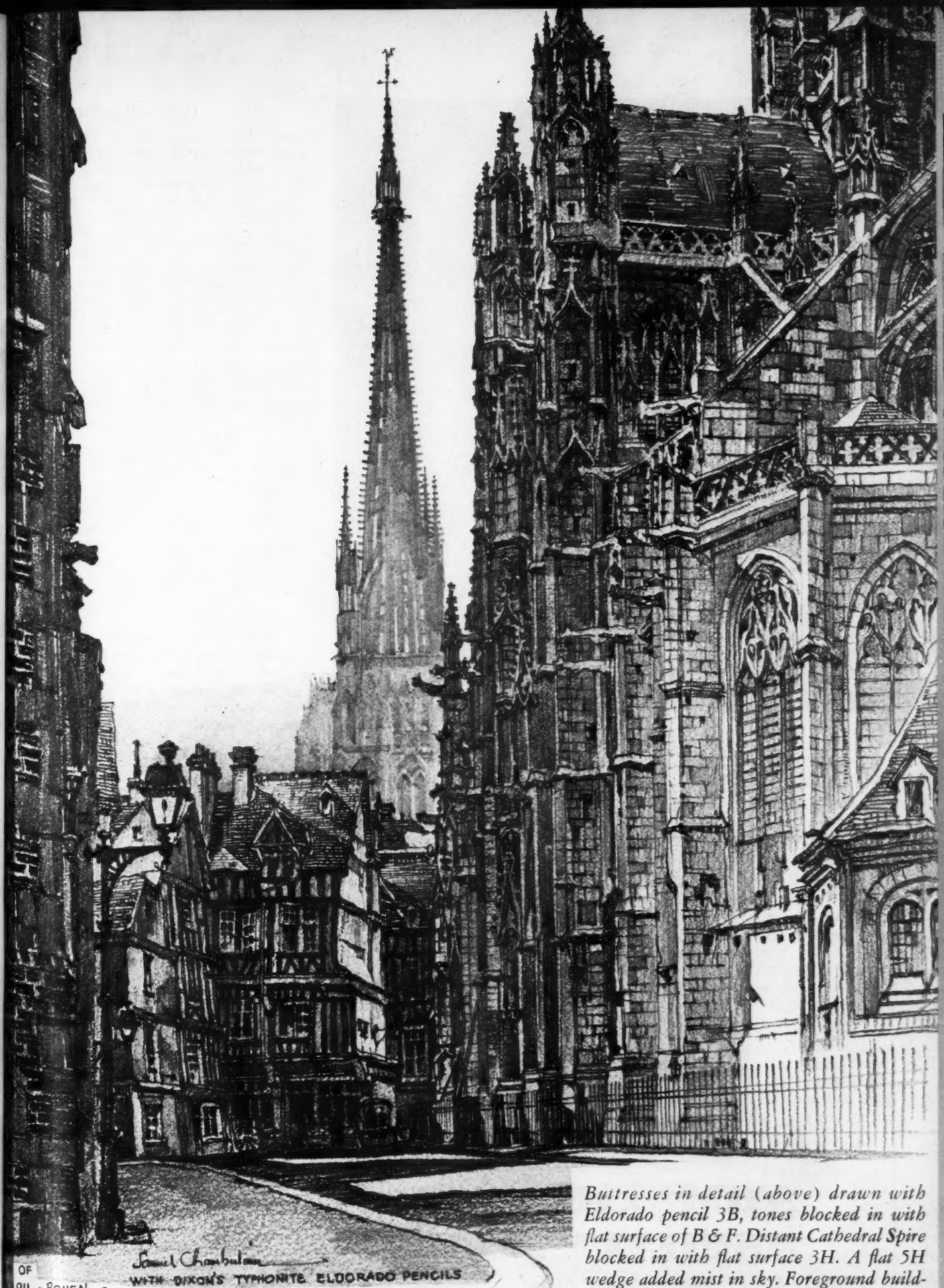
[3]Until December 1, 1943 insurance company may purchase land and erect dwelling facilities thereon, not subject to control of any state or municipal agency. (Parkchester was erected under this law.)

[4]Under the Constitution the legislature is authorized to "grant the power of eminent domain to any city, town, or village, to any public group, and to any group regulated by law as to rents, profits, dividends, and disposition of its property or franchises and engaged in providing housing facilities."

[5]Award of condemnation is not to be increased by any increase in value because of construction or proposed reconstruction of the area.

[6]Where public land is to be condemned, the use by a redevelopment company is deemed a superior public use.

[7]Maximum assessable limit in state project — actual cost of project.

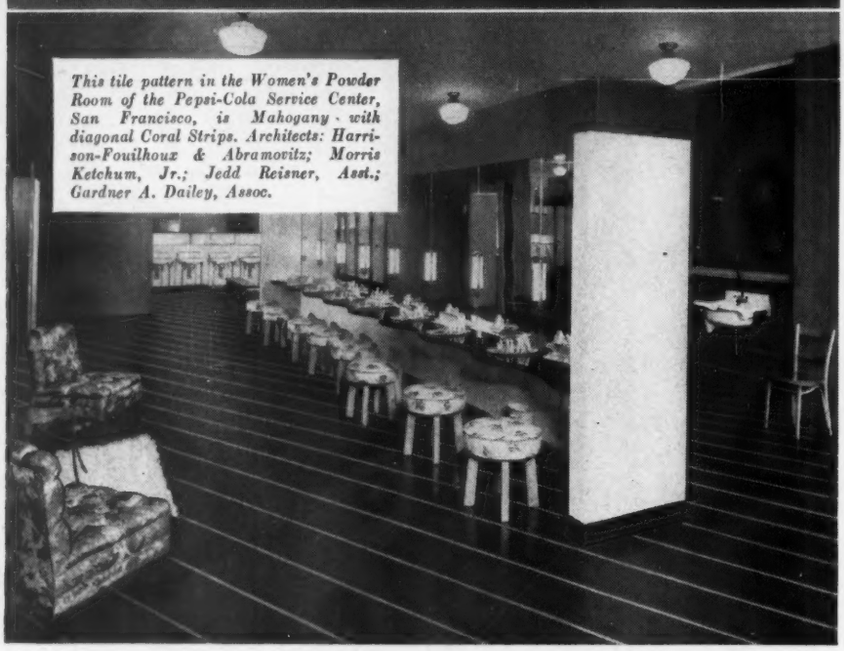


Buttresses in detail (above) drawn with Eldorado pencil 3B, tones blocked in with flat surface of B & F. Distant Cathedral Spire blocked in with flat surface 3H. A flat 5H wedge added mist in sky. Foreground building at left drawn with 6B, 4B, B wedge points.

Church of St. Maclou, Rouen, France. Begun A. D., 1437, smashed A. D., 1940 by the Luftwaffe. Pencil Sales Dept. 167-J9. Joseph Dixon Crucible Co., Jersey City, N. J.

ELDORADO

THERE WERE THREE musts FOR THIS SERVICE CENTER FLOOR



This tile pattern in the Women's Powder Room of the Pepsi-Cola Service Center, San Francisco, is Mahogany with diagonal Coral Strips. Architects: Harrison-Fouilhoux & Abramovitz; Morris Ketchum, Jr.; Jedd Reisner, Asst.; Gardner A. Dailey, Assoc.

. . . and Armstrong's Asphalt Tile Satisfied All Three

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Beauty—It is supplied in 39 harmonizing plain and marble colors which permit a wide range of original and beautiful designs. Its colors won't wear off because they go all the way through every tile.

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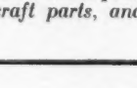
See Sweet's, Section 11/69, and write for the illustrated booklet, "Low-Cost Floors with a Luxury Look." Address Armstrong Cork Co., Resilient Tile Floors Department, 6909 Duke St., Lancaster, Pa.



The Army-Navy "E" flies over our Lancaster factories. It was awarded for excellence in the production of shells, bombs, aircraft parts, and other vital war materials.

ARMSTRONG'S ASPHALT TILE

The low-cost floor with the luxury look

MADE BY THE MAKERS OF ARMSTRONG'S LINOLEUM

(Continued from page 13)

Darcy, district engineer of the New York State Department of Public Works; Louis L. Delafield, Jr., attorney; James F. Evans, director of New York State Parks; John C. Evans, chief engineer of Port of New York Authority, and Shortridge Hardesty, consulting engineer. Also A. E. Howland, chief engineer of the Long Island State Park Commission; Richard V. Hyland, consulting engineer; Raymond P. McNulty, attorney; Sidney Shapiro, deputy chief engineer, Long Island State Park Commission, and Harry Taylor, assistant general manager of the Triborough Bridge Authority.

Mr. Moses' statement to the press included: "Mr. Kaiser told me that they expected serious unemployment after the war and that they wanted to have a large public works program designed and ready for letting of contracts to employ people released from shipping and other war plants in the demobilization period." Special attention is to be given to self-liquidating projects, he said. Mr. Moses' experience in this work includes his activities as Park Commissioner of New York City, as chairman of the Triborough Bridge Authority, as chairman of the State Council of Parks, and as a member of the New York City Planning Commission.

A WPB directive which conserves lumber and metal by increasing working stresses of lumber and fastenings, covers the following points.

An estimated additional 200,000,000 board feet of structural lumber and considerable metal will be made available annually by an action of the War Production Board which places the design of buildings using stress grades of lumber under a wartime directive as of August 9, 1943.

This directive, No. 29, entitled, *National Emeregency Specifications for the Design, Fabrication and Erection of Stress Grade Lumber and Its Fastenings for Buildings,* increases by 20 per cent working stresses for all lumber which has been graded for strength by a recognized lumber grading agency. The increase applies to all wood properties except modulus of elasticity which, being a physical constant, is not changed. In this directive it is ordered that these specifications apply to and govern the use of stress grade lumber and its fastenings for all buildings which are constructed, financed, or approved by governmental agencies on contracts placed after November 1, 1943. However, these agencies are empowered to put the directive into immediate effect wherever possible. Where contracts already have been placed or will be placed before the November 1 deadline, it is directed that they should be reviewed by the sponsoring agencies promptly and changes made in accordance with the emergency specifications unless such changes will result in a substantial delay in the war effort.

Stress grades of lumber have been substituted extensively for structural steel. In addition to that, there has been an increase in the volume of wood building construction. These two factors have created a shortage of stress grades of lumber. This increase in working stresses will help re-

lieve this shortage and make a larger volume of structural lumber available to further substitution for structural steel.

Use of increased stresses in the design of timber joints will also result in a saving of metal in connectors, bolts, lag screws—roughly estimated about 2,000 tons yearly.

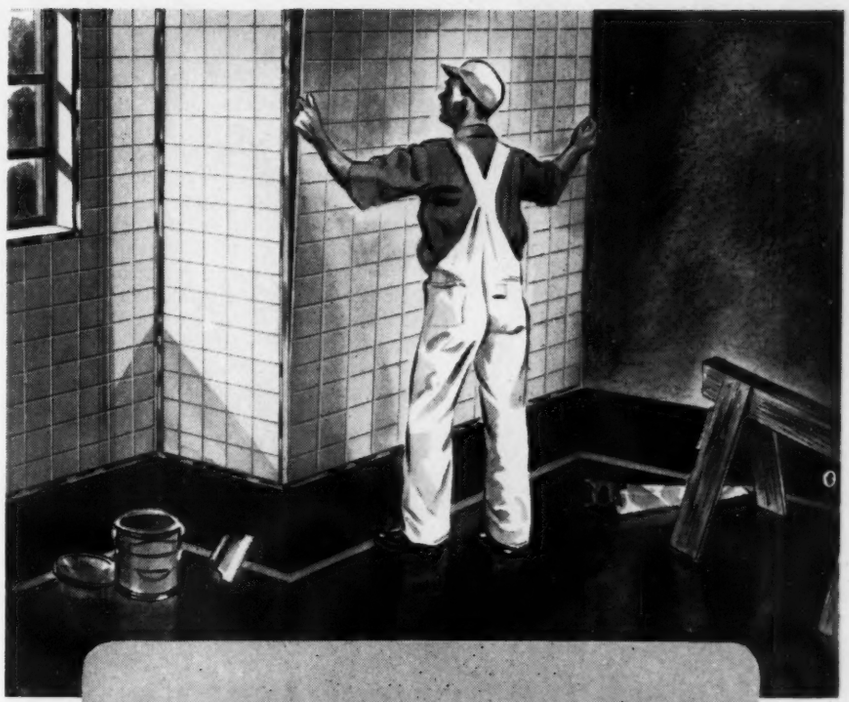
These specifications do not cover dwelling houses and light framing in which dimension lumber rather than structural is used almost exclusively. Neither do they prevent the use of higher stresses in military construction where such stresses are specified by the military authorities. As in the cases of Directives 8 and 9, covering steel and concrete, respectively, Directive No. 29 is limited to buildings in which stress grades of lumber are used, because during the emergency such buildings are largely financed by the Government.

Working stresses used heretofore with structural grades of lumber were conservative, the WPB states, noting that they were established a number of years ago for use under peacetime conditions. Considerable research has been done since, resulting in improved grading technique and design. This research work and the improvements were carefully analyzed by the Conservation Division of the War Production Board in cooperation with the U. S. Forest Products Laboratory and the National Lumber Manufacturers Association, and the results of that work embodied in these emergency specifications. The analysis indicated that the increase in stresses could be safely made without the hazard of failure and that they would prove satisfactory provided the precautionary requirements are observed. . . . This document covers not only working stresses for structural grades of lumber and design loads and formulae, but timber connector, bolt, lag screw, nail, spike, drift pin and wood screw joints. In addition there is a chapter on glued laminated structural lumber containing general provisions aimed at assuring satisfactory fabrication and construction in that comparatively new lumber construction field . . . . .

Copies of the specifications should be available about October 1. Requests should be sent to the Distribution Planning Unit, War Production Board, Room 1090 Railroad Retirement Building, Washington (25), D. C.

A $10,000 contest for the best heating designs to fit a hypothetical six-story house has been announced by the Minneapolis-Honeywell Regulator Company. Either steam or hot water heating will be acceptable. The contest closes November 15, 1943 and information can be obtained from the company in Minneapolis.

Draftsmen are being sought by the U.S. Civil Service Commission for work in federal agencies. Salaries range from $1,752 to $3,163. Experienced ship, electrical, mechanical, topographic draftsmen are specially needed; however, others without special experience will be accepted and trained. Announcement 283 and application forms may be secured from post offices, Civil Service regional offices, and the U. S. Civil Service Commission. Applications should be sent to the U. S. Civil Service Commission Washington 25, D. C.



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See *Sweet's* for quick facts. We'd like to send you illustrated literature and samples of Armstrong's Monowall, and to have you call on us for the nearest source of supply and other specific information. Just get in touch with your nearest Armstrong office, or write Armstrong Cork Co., Building Materials Division, 6909 Lincoln Street, Lancaster, Pa.

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NEWS

Products Progress

Plating Plastics, Etc.

Of especial interest at this time when the war requires metals is the new process by which plastics, glass, or any non-conductor can be perfectly plated with any of the plating metals. The plating is said to go on these materials as perfectly and as permanently as on metal bases. Convex and concave surfaces, convolutions, corners, and recesses are as thoroughly plated as are flat or simple round surfaces. Besides the conserving of metals, there is the advantage of greatly reduced production costs, the saving of weight, the simplifying of design, the insurance of dimensional stability, freedom from absorption of oils, solvents, moisture, and the increase of heat resistance. Electrolytic corrosion between dissimilar metals is also eliminated. Among the many articles which can be plated are: plastic tubing and pipe fittings, both rigid and pliable types; magnetic and electric shielding; and scientific instruments where lightness with solid precision is desirable. This process is announced by the Precision Paper Tube Company, 2023 West Charleston Street, Chicago 47, Ill.

Tile-Tex is "physically fit" for Recreational Centers

TILE-TEX floors are getting a rousing welcome . . . and a rigorous workout in the recreational centers from coast to coast. Trained to "take it" by years of development, Tile-Tex takes the hardest assignments in stride . . . and stands inspection like a cadet on parade. A ruggedly durable composition of asbestos and asphalt, Tile-Tex is ideally suited to the grueling service conditions of washrooms, storerooms, passageways and other areas where resistance to moisture, fire, acids and wear are prime requirements. In lobbies, office spaces, dining rooms and other like areas, Tile-Tex combines these essential features with good variety in color and design. Planned to give service . . . Tile-Tex requires but little. Maintenance calls only for occasional mopping . . . and installations may be made without interfering with the use of adjoining spaces. Write now for the name of an approved Tile-Tex Contractor . . . qualified to render complete, speedy Tile-Tex service.

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New Materials for Water Tanks

Concrete and wood have replaced steel in another capacity—the water tank of the huge Dodge Chicago plant, Division of Chrysler Corporation. Looking like a towering silo the cypress tank with a capacity of 100,000 gallons is mounted 125 feet above grade on a cylindrical tower of reinforced concrete. 60 tons of steel is the saving achieved by this use of materials. Other notable advantages incorporated in the design are: the placing of the pump pit inside the base; the elimination of frost casing because water pipes are entirely enclosed within the tower; the ladder, with landings at intervals, inside the tower, and provisions for hanging 100-foot lengths of fire hose inside to drain.

Another Use for Plastic

The Chase line of plastic lighting units, replacing former metal units, is being put out by the F. W. Wakefield Brass Company of Vermilion, Ohio. It is claimed that little, if any, difference in lighting efficiency exists between the two lines; however, there are differences in styling and there is a wider choice in the designs offered. Of special note is the material, *Plaskon,* an urea formaldehyde plastic, which is now considered to have a definite place in the lighting industry, having been recognized as a standard reflecting medium. Its weight is approximately one-quarter of that of other reflecting mediums of comparative size and it is not subject to breakage due to temperature changes. Cleaning the bowls is simple, neither hot nor cold water causing adverse effect; and dust and age do not deteriorate the quality of the plastic. This new line is offered in wattages from 200 to 750 and is available in either close connected ceiling or semi-rigid suspension types. Chase catalogue numbers are retained to facilitate ordering by previous purchasers.

Drawn from real life in 1939, on a Cleveland school building job, this picture demonstrated the ease with which aluminum spandrels were set in place. Architects had discovered the many advantages of using spandrels cast of Alcoa Aluminum Alloys, from a design and structural standpoint, and the future looked bright for this product. Then came the war—

From making aluminum spandrels, every foundry swung over to fighting equipment. No more aluminum for architectural uses! But out of this war effort is developing something of great importance to architects and builders.

Those fabricators of aluminum have forgotten the fear of complicated jobs that once made them hesitate; experimentation is behind them, and they'll be ready and willing to execute your designs. Aluminum will be more plentiful when this war is over, than anyone ever dared imagine. Prices are lower than ever before.

The many forms in which Alcoa Aluminum Alloys will be available, its attractive surface finishes, offer tremendous possibilities to the architect who is also an Imagineer. ALUMINUM COMPANY OF AMERICA, 2198 Gulf Building, Pittsburgh, Pennsylvania.

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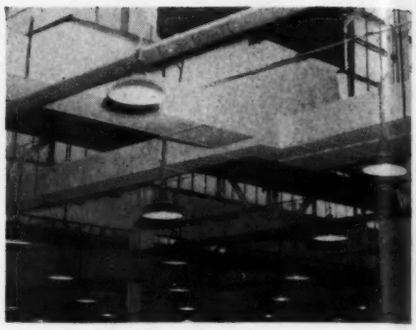
NEWS

New Bonding Process

A process for joining thin sheets of metal to plywood with a bond stronger than the materials themselves has been recently announced by the U. S. Stoneware Company, Akron, Ohio. They call it the Reanite Bonding Process and it is said to be capable of joining almost any metal to any other metal or to wood, leather, plastics or synthetic rubber.

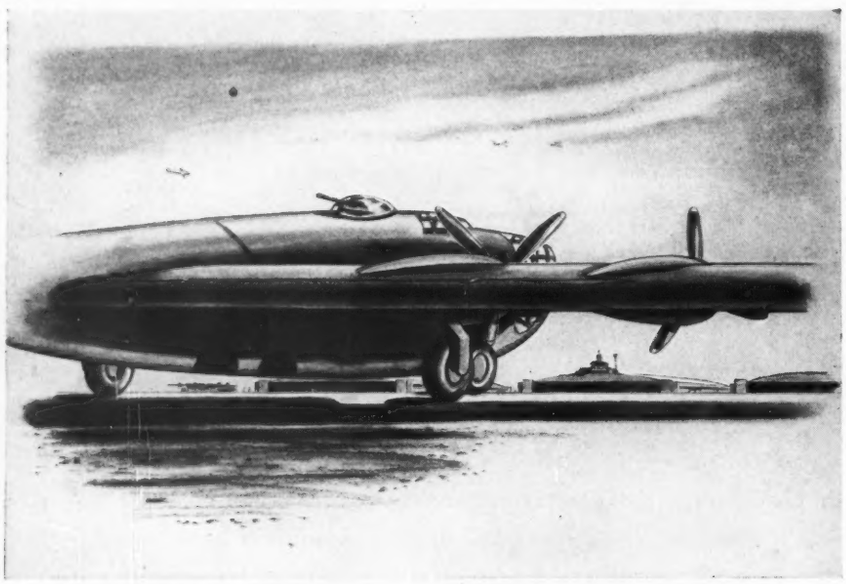
The joint has proved stronger than riveted or spot-welded assemblies; on tests between non-metallic materials or between metals and non-metals, the materials themselves gave way before the bond. Of especial value is the ability to join thin metal sheets to plywood as it opens up a large range of uses. The pre-fabricated housing unit, cabinet assemblies, refrigerators, furniture, etc. will come in for their share of its use. Because the joint is unaffected by salt water or fresh water and possesses extreme resistance to vibration fatigue, its use is indicated for small, high-speed boat construction.

Application consists of brushing, spraying, or dipping the surfaces to be joined, then drying for an hour under mild heat and pressure. The bond is effective in temperature of 40 degrees to 300 degrees Fahrenheit. Reanite is available for essential uses in gallon, five, or fifty-five gallon containers.



Substitute Material for Duct Work

Ruberoid asbestos duct work for ventilating and air conditioning equipment in the plant of the United States Rubber Company at Mishawaka, Indiana, saved 78,000 pounds of steel, according to the report of the installers, Carrier Corporation. There are 16 heat diffusers to supply outside air for spaces with high concentration of Ethylene Dichloride, Methyl Ethyl, Ketone, and Iso Propyl Alcohol; there are 21 ventilating units for exhaust air purposes, and three industrial air conditioners with cooling coils for the circulation of well water. This air conditioning equipment is for use in the processing of rubber for self-sealing airplane fuel cell tanks in connection with nylon and cement drying. Because nylon is applied with paint brushes, the volatiles within it flash off causing a low surface temperature which would result in "blushing" if surrounding air was not reduced in dewpoint to a satisfactory low level around 55 degrees.



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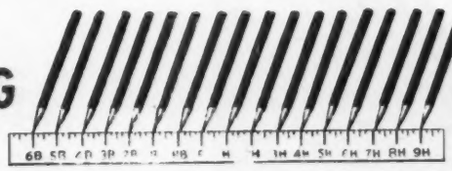
☐ **PRECISION GRADING**  accurately spaced

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(Continued from page 10)

tories which do most of the work today and they certainly do not inspire young graduates to intellectual development. They will convert architecture into a mere big business, quasi monopoly.

(b) The A.I.A. code of architectural practice forbids architects to act as general contractors for the owner. In recent times conceptions and values have changed utterly in society and government, conforming to other developments that took place on every field of human endeavor, yet the architectural profession refuses to change its conception as to what a complete architectural service should or could comprise. We witness the "Architect-Builder" coming more and more to the fore, displacing the man whom we now call the purely professional architect. This is an inexorable fact and no anathematization on the part of the "orthodox" profession will change this condition. We must deal with it as an already firmly entrenched circumstance and redetermine the role of the profession in the entire science and art of building. Perhaps the architect (or engineer) if he so chooses, is the one best suited to handle completely the very structure conceived by him, including the final phase of its physical evolution! Why, in the face of such changed circumstances, continue to make it mandatory for an architect in good professional standing to exclude *professional* construction from an all comprising technical service? Should we not apply in this case the old dictum that the "Sabbath is made for men"; not the reverse? Of course the profession should insist that in such a case the arrangement between the architect and his client should be such to comply with the ethical standards established by it. In the final analysis all ethical standards are based on personal integrity, not on police power; and the same personal integrity will be brought to play in the case of the broadened professional service properly regulated.

There is hardly logic in the existing A.I.A. standard, that while an architect may undertake to design and specify a building at a fixed fee or even more often on a percentage basis, it is deemed unethical for him who has thought out and planned the building to construct it, also, at a fixed price or at a fee based on a percentage of the approximate building cost. The architect, in the historic role of master-builder and designer would not constitute a departure from professionalism, but rather a return to that role and an approach to a higher perfection and all embracing activity in his field. The very name architect means "master-builder." In entire continental Europe the architect or engineer does, as a rule, design and build structures.

I believe, in the case of the builder-designer, we cannot eject these invaders from the

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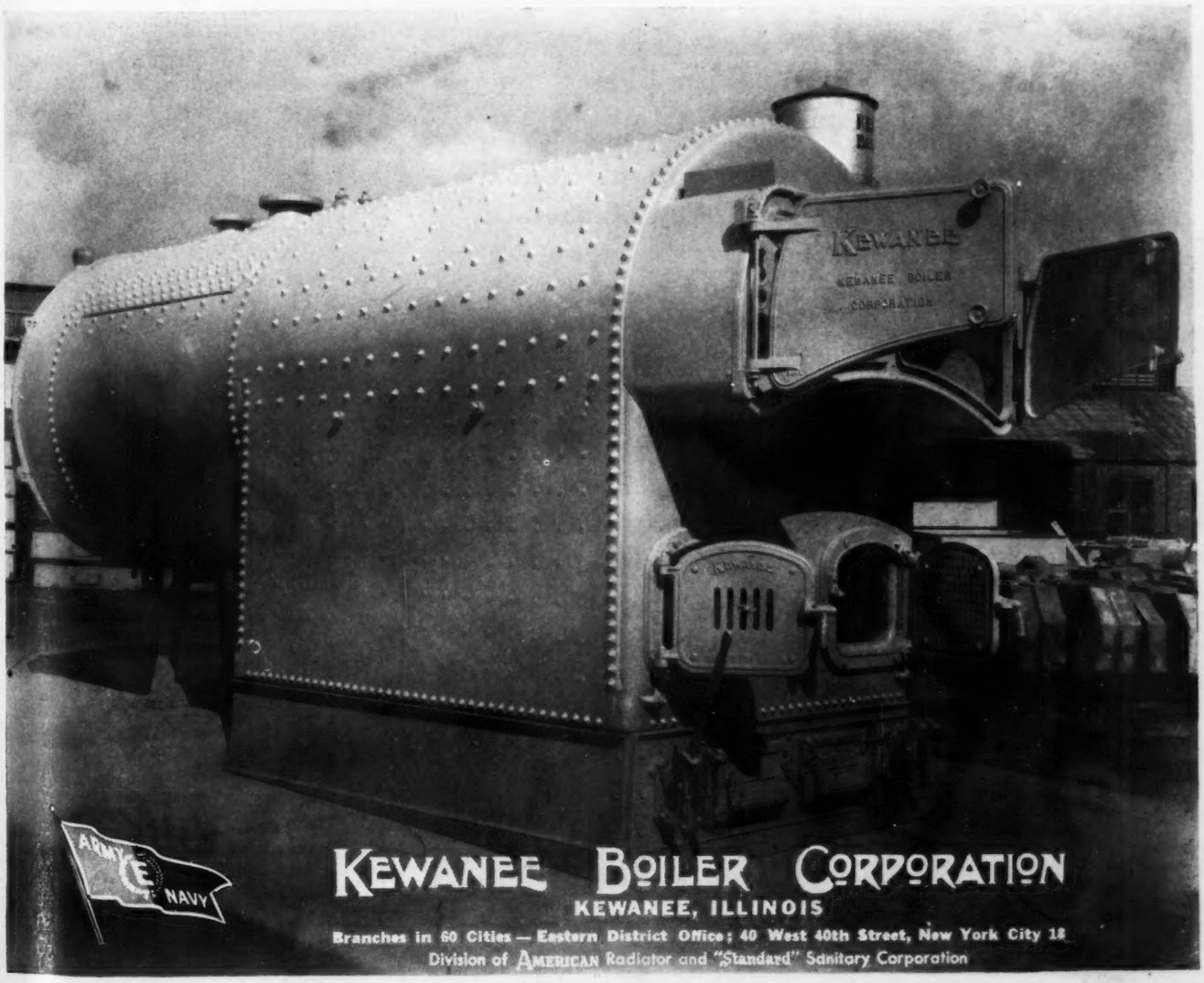

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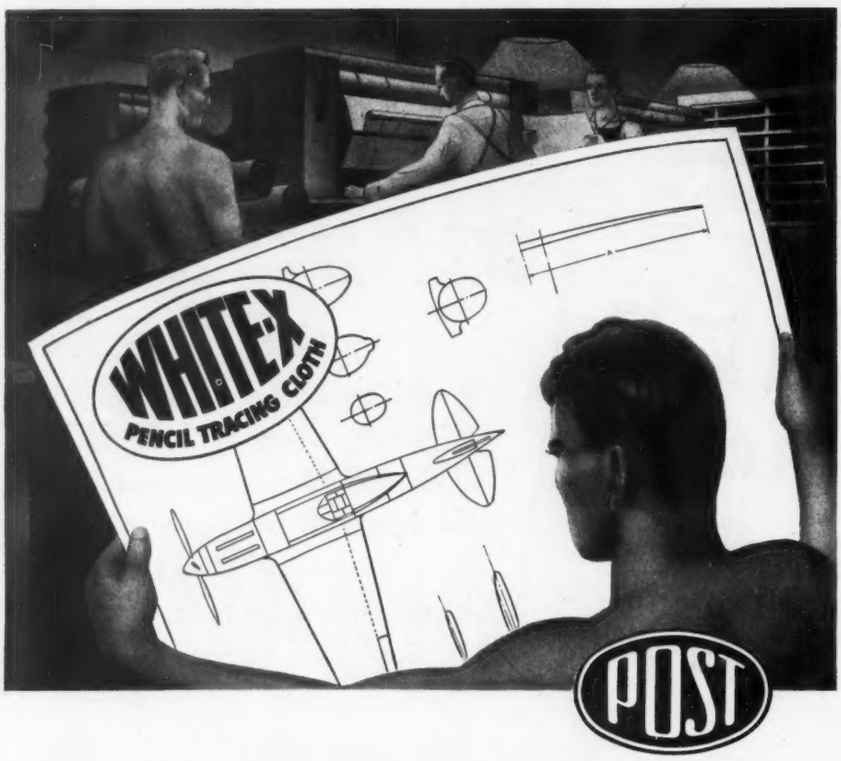

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VIEWS

profession, but we can and should adopt professional construction and so invade the invader.

These thoughts are respectfully offered in answer to Mr. Shelly's exhortation for engineers and architects to awake and think of how to protect their professional practice. Maybe, or rather it can be said surely, these deleterious tendencies may yet be staved off and our profession remain, as it was throughout the ages; educator and refiner of people's senses, guardian and developer of nations' economies.

Dear Editor:

My July issue of PENCIL POINTS has just been forwarded to me down here in New Orleans, where I am working on the construction of a large defense plant for Albert Kahn.

The idea for "The Architectural Center" is the best thing that has happened in many years. May I commend you on the scheme, the setup and the thoroughness with which you have prepared your presentation?

I happen to have received my architectural training during the years 1925 to 1930, when so-called "modern" architecture was coming into bloom. The schools were then, as they are even now, lost in a fog of facade trimming. The meaning of materials, the relation of building to social and economic phases of living, and all those fields which you now propose to coordinate and develop at the Center were definitely outside the pale.

I saw that lack then and the discovery of Frank Lloyd Wright's work was the only salvation for me as a student and later as an architect. However, it has been a lonely vigil at best, with no opportunities for expression.

I therefore welcome your scheme. With best wishes for its immediate success and hope that you may find a place for me in its diversified activities.

"You've Got Something."

MAX R. HORWITZ, Architect
New Orleans, Louisiana

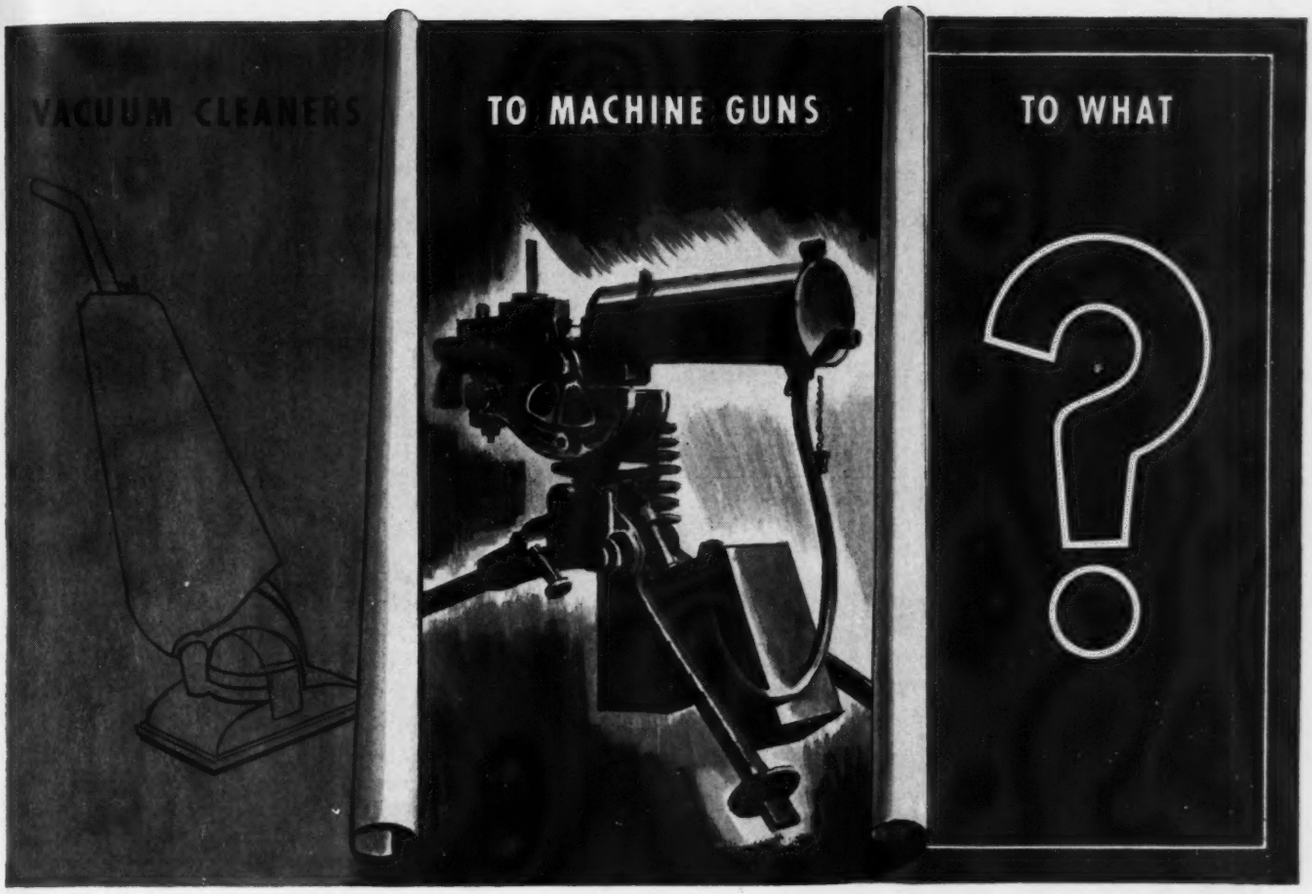
Dear Editor:

. . . I haven't had much opportunity to think about architecture but the recent issues of PENCIL POINTS I've seen are swell and you certainly are to be congratulated.

EDWARD D. STONE, Architect
(presently a captain at the Headquarters of the Army Air Forces, Washington, D.C.)

Data Wanted

A. READ SAUNDERS, Engineering Section, Depot Utilities Office, Brookley Field, Mobile, Alabama. (Architectural, engineering, and building material catalogs; manufacturers' literature on structural design, planning, mechanical equipment, construction details, and AIA files.)



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REVIEWS

(Continued from page 22)

through in spite of public participation in three other important plans.

Astragal comments on the plight of the RIBA mentioned in a report by Michael Waterhouse. Mr. Hugh Quigley compares TVA with what is needed in the Highlands of Scotland Hydro-Electric Plant. Wartime materials' price lists are here. Domestic Water Heating is this week's Information Sheet.

(August 5 Issue). The new supplement on Physical Planning caused by the delay in policy formation by the government is explained in a justly disillusioned lead article in this issue. An Army exhibition of the type found countrywide in America has been opened on a bombed site. This Information Sheet is again on Building Boards. Astragal is to do the survey portion of the Physical Planning Supplement; after that it is to fall to others. As usual he works picturesquely though here very much to the point.

A recording theater at Denham presents a good acoustics solution. H. C. Weston analyzes lighting for the RIBA, and the plastics committee reports and advises on uses of plastics.

(July 29 Issue). This issue is a supplement concerned with "Physical Planning" and is devoted almost completely to a civic diagnosis of the city of Hull. Mr. Max Lock of the Mars group is directing the survey which is one of the most thorough undertaken in Britain thus far. The redesign of Hull is aided by the blitz-cleaning it received early in the war. If as thorough a survey were undertaken for every city which is to be rehabilitated there would be small danger of mistakes which in later years might negate the plan's value. On a smaller scale it is as complete a research as that conducted for the TVA development.

THE ARCHITECTURAL ASSOCIATION JOURNAL (May Issue). Mr. T. P. Bennett reviews the *"Organization of Building Operations"* as they have developed during the war. He cites the faults allowed to slip by because of haste and also points out the improvements made by a new concept of building based less on handicraft improvements and more on taking advantage of technical advances in manufacturing.

There is a report on the exhibit by the London Reconstruction Committee denominated *"Greater London—Towards a Master Plan."* Feeling their long series of reports had been pigeon-holed, the LRC developed actual physical plans.

Robert Medwin comments on the RIBA exhibit, *"Rebuilding Britain"—"rebuilding whose Britain?"* He feels strongly that such planning should come out of the museums and occupy the public attention to achieve any power to be put into concrete form. He commends the Carl Sandburg lyriced *"America Marches"* of the U.S.A. as being a piece of work understandable by the public.

ARCHITECTURAL DESIGN AND CONSTRUCTION (June and July Issues). Scotland, as is the rest of Britain, is waiting for a definite declaration on housing by the powers that be. The Scottish problem is reviewed by Mrs. Jean Mann. To continue with interest in Scotland the seventh Housing Forum has Monica Pidgeon's, "Twenty Years of Housing Progress in Scotland." It is certainly informative reading. Cellular concrete for rapid building is discussed.

A "Housing Competition" in which no entry was considered worthy of first prize and prizes were divided evenly between best layout, best house plans, and best general scheme, is published. The first classification was won by two women architects.

(July Issue). A sketchy survey of the RIBA, LRRC plan for London is presented this month. Lord Portal speaks to the House of Lords about the future of the building industry and announces the appointment of a Controller of Experimental Building Development responsible for co-ordination

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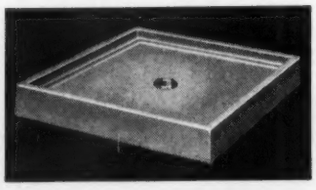

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REVIEWS

of all ideas and new methods developed by firms or individuals in building materials and equipment. He discusses the "White Paper" providing for a twelve year period control of building industry.

Installment six, of the "Housing Forum" describes a war housing scheme and its adaption to postwar development. Kitchens of no extraordinary advanced planning, and a well done work by Charles Hellstrand concerning the Swedish standards for heating and insulation are included. The Royal Academy exhibits some rebuilding and an addition to Westminster Abbey.

THE ARCHITECTURAL REVIEW (June, July Issues). Julian Huxley takes almost this entire issue with a typically thorough survey for the English public's better understanding of our TVA. At first it is most interesting to note the terminology, so different from that used in a similar American review of the subject. To attempt to review each part of this thirty page writing would be to repeat it for it is done with conciseness and not befogged by a maze of figures far ahead of the public's comprehension. Mr. Huxley concludes that this is the only successful, large scale, democratic planning yet achieved and hopes it may not be an isolated example but will form a pattern for postwar planning of even greater magnitude. This is recommended reading for all Americans who wish to be informed on real American achievement for nowhere else has the TVA been so clearly outlined. Powerful photographs accompany the writing.

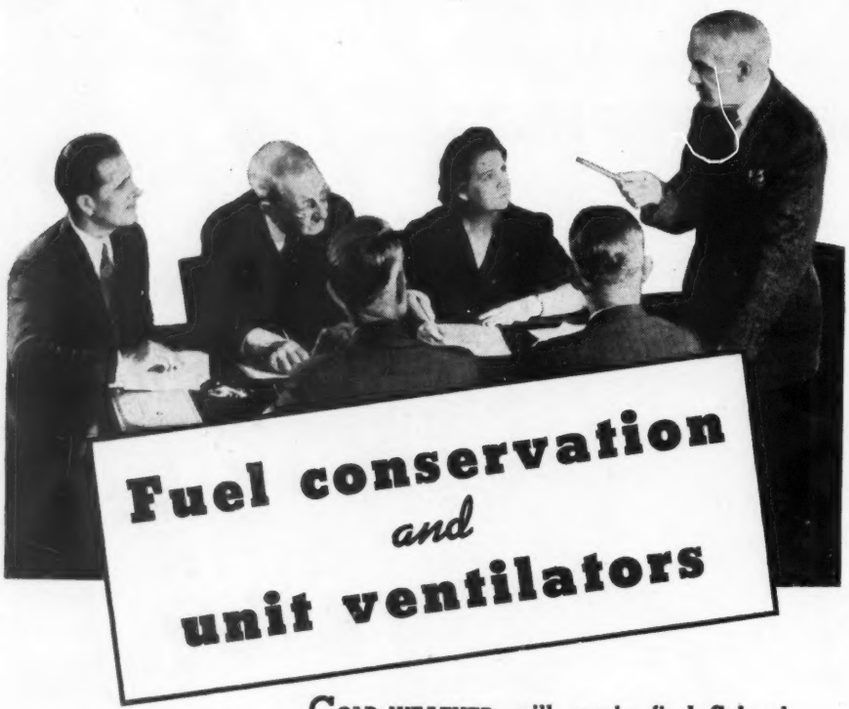
Sir Kenneth Clarke taking up the sword of Sigfried Giedion writes in this issue of the long neglected Baroque sculpture placed with such ill-ease in Westminster's Gothic halls. Outstanding photographs accompany.

A children's home in Sweden by Paul Hedquist is excellent but not many such projects have the ideal land, either in largeness of area or in grading, that led to this fine open plan and honest building.

Dudley Harborn discusses the Queen Anne style range of the 1880's when it was felt to be an aestheticism much as most people regard our modern furniture of today as such. Seemingly, it is not until furniture goes beyond the aesthetic stage and the promotion by the fashionable that the fundamentals of the movement can be perceived and the newer work become recognized through its principles. It is at this point only that it reaches common man's understanding. Unfortunately by this stage the development has gone further on ahead. It is then literally true that Bauhaus modern, which we have already gone far beyond, will be accepted just as we arrive at still more honest forms. The process will then be repeated, with public acceptance always lagging several years behind developments.

The first in a series of annotated photographs of bomb damage to notable buildings and work by John Piper on "A Cubist Folk Art" in Ireland complete the issue.

JOURNAL OF THE ROYAL INSTITUTE OF BRITISH ARCHITECTS. (June Issue). Attacking the plan of London much as did the plan of Sir Edwin Lutyens, that is via its traffic problems, the London Regional Reconstruction Committee exhibits, at the National Gallery, London, the proposal which grew out of its many reports. From what this magazine publishes and from other reading, this plan far exceeds the Lutyens plan in technical development of traffic control and in reorganization of the city. No commitment is made as to the architectural character of the city—and this is obviously the right way to work at this stage of the planning. It is contrary to the approach which seems to have been used, or results would indicate so, in Sir Edwin Lutyens pseudo-classic city.



Fuel conservation and unit ventilators

COLD WEATHER will again find School Authorities struggling with the problem of fuel conservation.

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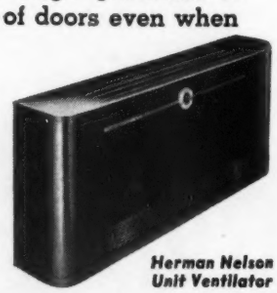
Herman Nelson facilities are now engaged in producing equipment to hasten victory. With peace, we will resume the designing, developing and pioneering of equipment to provide better schoolroom ventilation at less cost.



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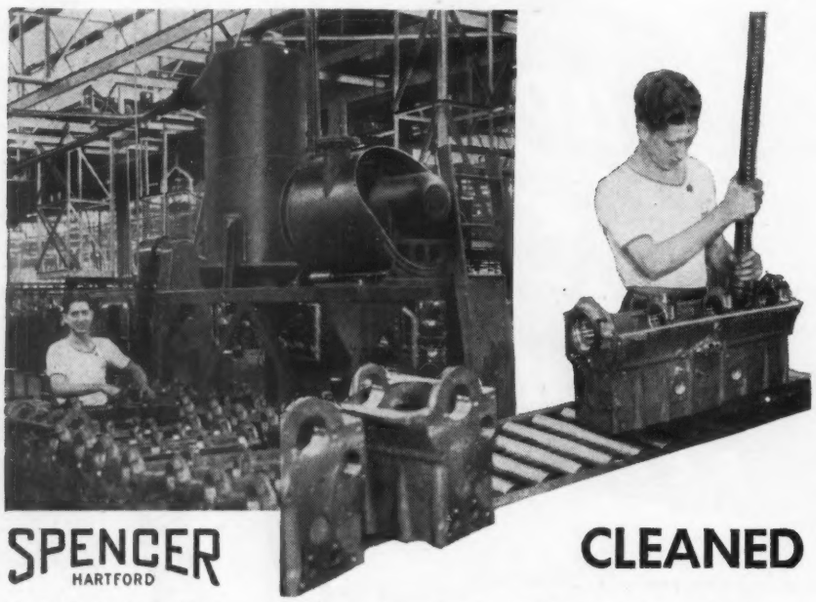
REVIEWS

Hidden away in the center of the magazine is one of the best knowledgeable short articles on the *"Fundamental Principles of the Weathering of Building Materials"* by F. L. Brady. This is certainly to be recommended to all who vaguely know the faults of their materials, but not their causes, or what can be done about them. From the incomplete information in this issue (August will see a more complete review) the plan for London by Professor Abercrombie and Mr. Forshaw seems not as founded upon thorough study as do the two preceding plans, because the city is divided arbitrarily into named areas.

In an address to the RIBA its secretary, Michael Waterhouse, deplores the loss of "normal outlook and normal type of work" during the war. It is thus that the architect will sing his own death knell—it is in this way he will demonstrate his uselessness in any world but one in which he may decorate decorative buildings. What then of the architects' expressions of desire to improve the lives of men. They become absurd in the face of such a lecture as this. Fortunately it is not so with the sincere man who regards his work in the war as having limitless ability to contribute to the world.



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THE ARCHI, magazine of the Alpha Rho Chi Fraternity. (June Issue.) Eliel Saarinen is named Master Architect by the Fraternity, an honorary title offered Cass Gilbert before him. The fraternity seems to regard itself as a craft guild and if it is such did well in honoring Mr. Saarinen. Milton S. Osborne writes a nostalgic tribute to Cranbrook Academy and Charles D. Maginnis, past president, AIA, discusses his approving view of work at Cranbrook from the viewpoint of the traditional school in which he was taught.

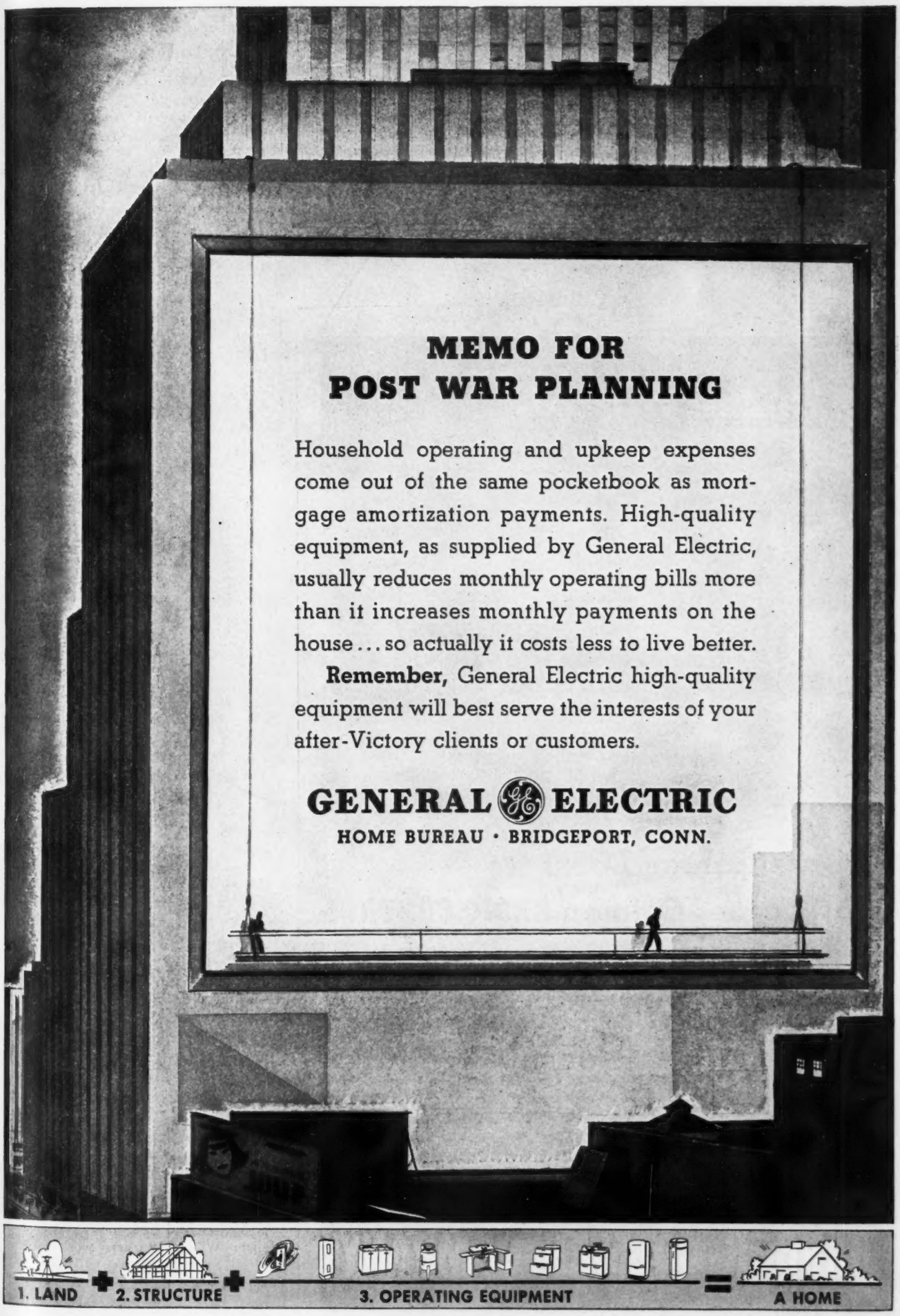
ARCHITECT AND ENGINEER (May, June, July Issues). A discussion of Post-War Schools by John Lyon Reid is illustrated by photographs of six recent California schools by Franklin and Kump and Associates. One of the best of which is the Acalanes Union High School, Lafayette, California. Training of head and hand instead of mere copybook learning is the trend of education and thus more "activity space" is required. Specialization has increased so in our living today that more shops are required for the educational institutions. The school is also becoming a learning center of the entire community. To help this centralization, libraries and museums are incorporated into the school building. Play activities and nursery schools mean that the school does not close for a quarter of the year.

Technical equipment, movies, etc., and bus transportation have become the problems of decentralized schools. The photographs with this article are very good and one wonders why California is so many miles ahead of New York in its schools.

Jacob L. Crane, Jr. Director of Urban Studies, NHA, writes of Postwar City Planning and Rebuilding. Housing today is expendable, as are most things in war time; tomorrow, Mr. Crane believes, it will be one of the main fronts after the war. He is concerned not with how much work there will be but with the direction it will take.

Cyril Ainsworth writes about lighting as used against sabotage in war plants. A talk to Structural Engineers on problems facing them after the war is also included in this issue.

(June Issue). "Safety and Better Living" is the title of an exhibit shown recently at the San Francisco Museum of Art. It was an exploratory venture into possibilities for postwar San Francisco. Since most of the attention is upon safety in this exhibit many other phases are overlooked and the plan makes use of the somewhat historical "superblock" with interior park and cul-de-sac streets.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REVIEWS

Converting a store into war time housing is a new and interesting facet of war influence. The great difficulty is that provision must be made for a reconversion after the war. Frederick Longhorst makes four apartment units out of a Berkeley store.

The potential market for postwar housing as surveyed by *Parents' Magazine* and taken among architects, builders, and building supply houses is of significance in showing the progressive thinking in progress in these fields.

An A.I.A. convention report on fallacies in past planning, and an article, *Reinforced Concrete Barges,* complete this issue of a magazine varied and fairly solid in content.

(July Issue). Most of the writing in this issue is colored by the anxiety over possible federal control of planning after the war and, while it is definitely a considerable problem, it seems most obvious that something can be done to prevent complete federalization of work. But that something must be done by the demonstration of individuals that they are fully capable of handling any project, no matter how enormous.

Mr. Robert McCarthy, a contractor, receives praise for his rapid fire raising of prefabricated war housing. He worked on the Chabot Acres project at Vallejo, California.

Two projected postwar airports, one at San Francisco Bay, the other in Honolulu, demonstrate the large amount of thought being given world unity by airplane. Except for the staggering cost estimate of the San Francisco Bay project—sixty million dollars—due largely to a 3200 acre fill off the Oakland water front—there is little in this presentation. The Honolulu plan makes use of existing land, is as well laid out and seems a far more valid scheme.

Quotations from Dean Walter R. MacCornack of M.I.T. as he addressed the annual meeting of the A.I.A. in May concerning the basic concepts of successful city planning are included in this issue.

CALIFORNIA ARTS AND ARCHITECTURE (June, July Issues). Usually well laid-out for easier reading and comprehension of work presented, this issue of the magazine is an exception. Charles Eames' work on a City Hall has View 3 placed upside down, possibly to maintain a favorite page layout. The confusion it causes is certainly not justified. The plan represented here has possibilities.

Among other subjects shortly touched upon is the writing by Robert Joseph concerning the World War I and II representation of the Nazi as given to us by Hollywood. Plyline knockdown furniture by C. Coggeshall, some of which has merit in simplicity, in spite of the hideous chair included, shows it to be far from the final word in packable furniture; an excellent and much needed simple prefabrication vocabulary; an ingeniously remodeled house; interiors done for the Beverly Hills Hotel by Paul Laszlo and the usual book, art, and music reviews done as well as always.

This issue contains a great amount of interesting material but most outstanding is the research on the Vallejo Housing Authority's success in Vallejo's time of dire need. Architects William Wilson Wurster, Vernon deMars (formerly of the Farm Security Administration), Harry F. Devine, and several contractors, inhibited by red tape and no centralized jurisdiction over them, have worked on this group of projects. Suffice it to say that out of all of the buildings and planning (though even he was held back to a great extent) William Wilson Wursters work far excells all others. Work by contractors, without the aid of an architect and with the bullying of the many agencies con-

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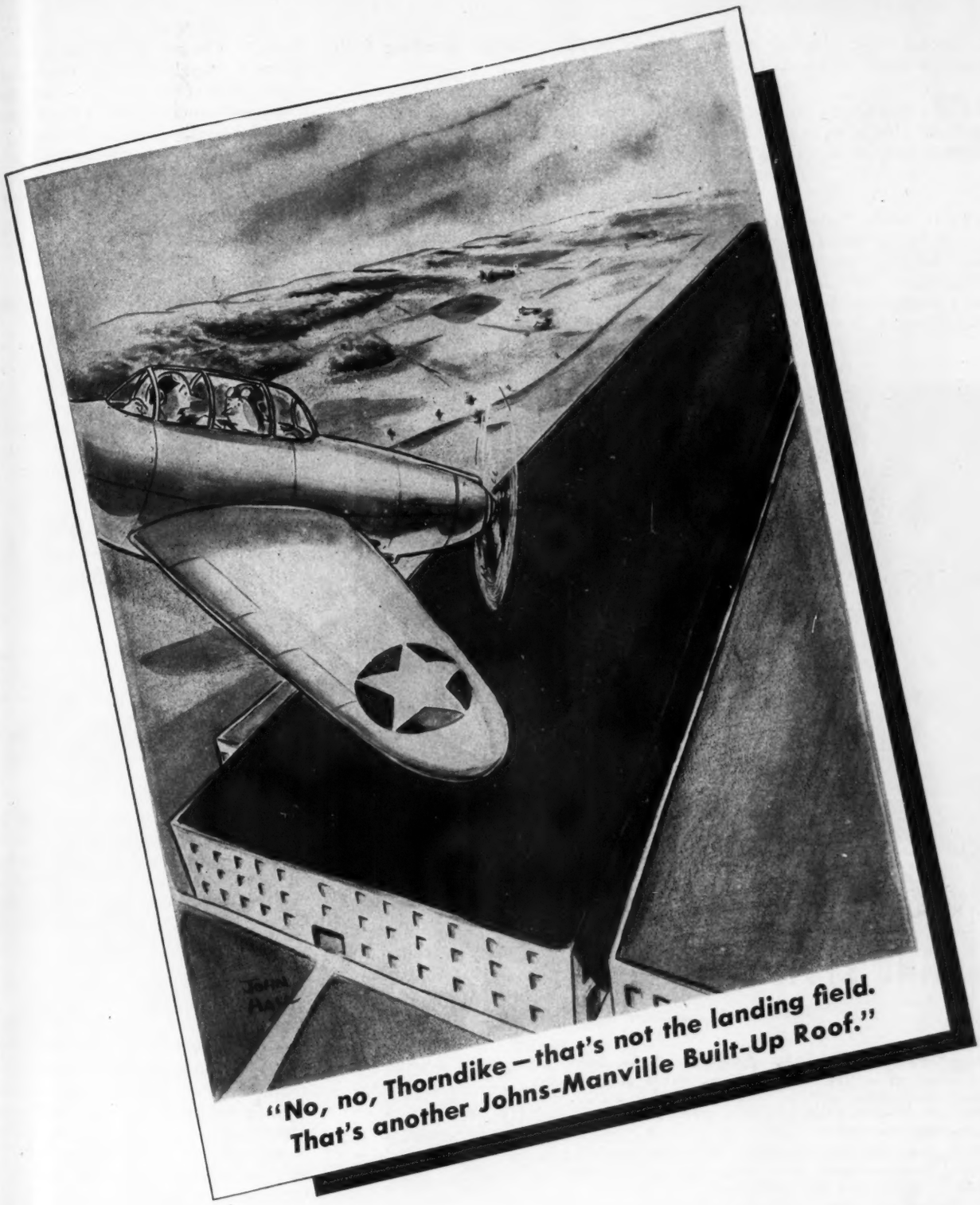

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REVIEWS

cerned, ignored most planning requirements, among them recreational facilities.

The lack of a co-ordinated far-seeing program at Vallejo has taken its toll of work and materials here and under-supplied the needs.

(July Issue). Emilio Pettoruti, Argentine Cubist studying American Museums and sponsored by The Committee on Inter-American Artistic and Cultural Relations, is given a favorable review and, in spite of his obvious roots in Parisian cubism of the early 1900's, he brings something fresh to the manner.

Vice-President Henry A. Wallace writes on "America's Part in Post-War Reconstruction." It is a good and fair but not startling survey of the problems facing us in international policy after the war.

Emil Frei has, judging by reproductions, here done some very creditable work with stained glass. It is however directly responsible for its designs, especially the heads, to Moissac and Suillac.

There is a rather generalized article by Walter R. Hagedohm about "Camouflage," a discussion of Roy Harris' Fifth Symphony and Aaron Copeland's Piano Sonata, a small house by John C. Campbell and Worley K. Wong resembling very much a school problem solution, and a project by fifth-year students at the University to rehabilitate blighted Bunker Hill area in Los Angeles. The latter's plan is sound and interesting, but is accompanied by odious comparisons between the cost of this project and the hourly cost of the war.

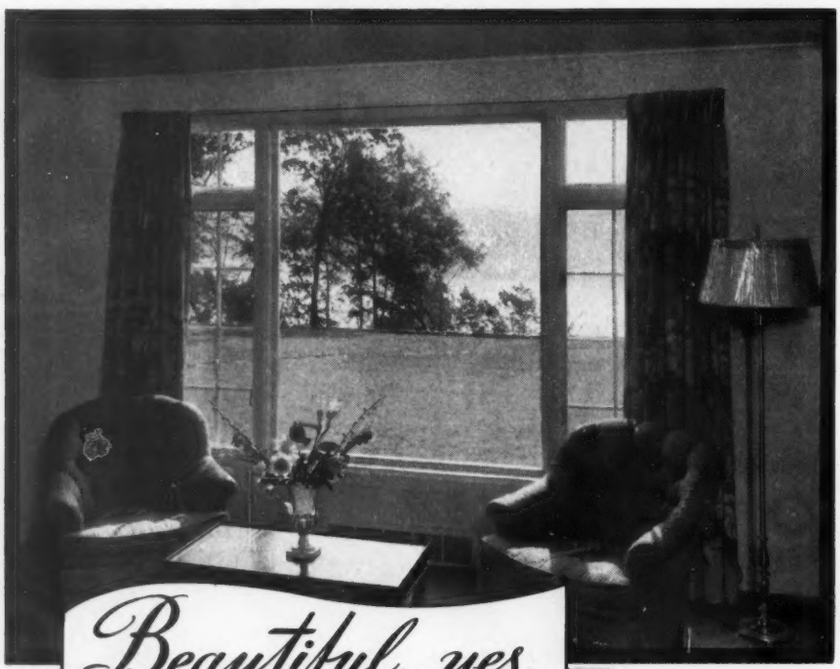
EMPIRE STATE ARCHITECT, the official publication of the New York State Association of Architects (March, April Issues). Along with a report on the Board of Director's meeting is published a lively protest by A. V. McIver, President, Montana Chapter A.I.A., against the "dying swan" attitude of many architects toward their profession. He rightly points out that every chance is theirs and that they will bring about their own downfall by this dismal propagandizing instead of an attitude of co-operation and forceful thinking.

Ogdensburg has a new group of school buildings by Randall and Vedder which are anything but satisfactory in plan and appearance. D. Kenneth Sargent suggests that it is the architect's responsibility to reduce the enormous death rate caused by home accidents.

A bill lies before the state legislature for the creation of a postwar commission blest with a three million dollar fund and having power of approval or refusal of all projects within the state. This looks like the deathblow to planning progress for New York.

THE FEDERAL ARCHITECT (January-April and July Issues). The aspect of these two issues is tragically sombre and born of the evils of the Civil Service system itself. No organization founded upon a false security (impeachment is almost the only way of firing a civil service employee) and a completely false method of advancement as well as an overall supervision by means of an every man checking system, can produce living architecture. Caution, fear of losing that raise he has been waiting for so long, deaden a man's imagination, even his ability to think clearly and he does what he thinks will "get by" the dozen or so checkers who see his work. This is no doubt why the printed matter carries nothing but a feeling of hesitancy.

The hospital planning by the construction service of the veterans' administration, showing only facades of a bygone day, are equipped with most imaginable inconveniences for the ailing, pompous stairs, with minimum light and air, and show



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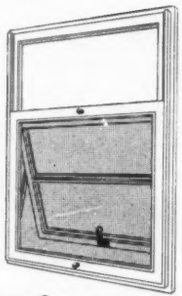

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cramped planning. *"Log and Stone Construction by the Forest Service"* presents several quaint, over rusticated buildings. What a challenge this work would present to an honest, free architect! Temporary buildings in Washington, represented and in lack-lustre appearance, are almost as bad as the pseudo-Georgian qualities of the hospitals.

The January-April issue is almost entirely printed matter falling into the above classification of unconvinced waverings. When we realize the large numbers of federal architects employed and what they might have done under a different system this magazine seems most depressing.

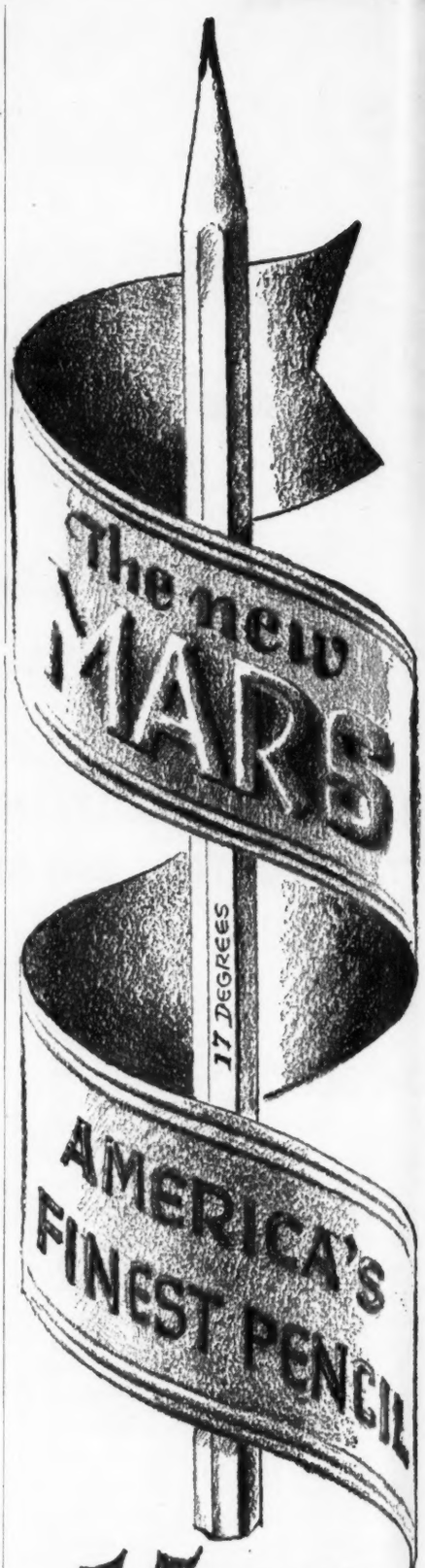
INTERIORS (July Issue). This magazine so often merely an insidious influence on the public through its promotion of unfortunate bric-a-brac and copied traditional furnishings, has in this issue an excellent letter to the editor clarifying the belief of the really contemporary designer in honest design which should replace traditional coping. Mr. Alexander Tristram Yelin of Ontario, quotes Plato more aptly than most to demonstrate his contention that the public demands bad things because they have not had contact with the principles behind the creation of true beauty in contemporary terms. He suggests that architecture and design, music and literature, and physical culture and dancing be incorporated into the program of every schoolboy and points out that this is basically democracy and not a Utopian scheme. This letter is one of the clearest, most concise presentations of the argument so far.

Most readers will enjoy the "ride" upon which the fantastic Times Square victory arch, proposed by the "politically powerful" Broadway Association is taken. The arch is described as "nattily double breasted," "cantilevered in principle," and as having a central pylon of painted plywood.

A clever drawing by Florence Schust of a proposed lounge for war workers does not disguise the over-heavy derivative furniture used in the room.

The remainder of the magazine is given to show rooms for various prominent firms and some interesting "war-ware" pottery designed for interchangeability and packability. Service wives who must move constantly would appreciate its qualities, but whether it will be available to use in time and whether it is satisfactory for full time china-use are questions to be asked.

MAGAZINE OF ART (April, May Issues). To the architect, the article of most interest is that by Dean Joseph Hudnut of Harvard, called *Architecture After*



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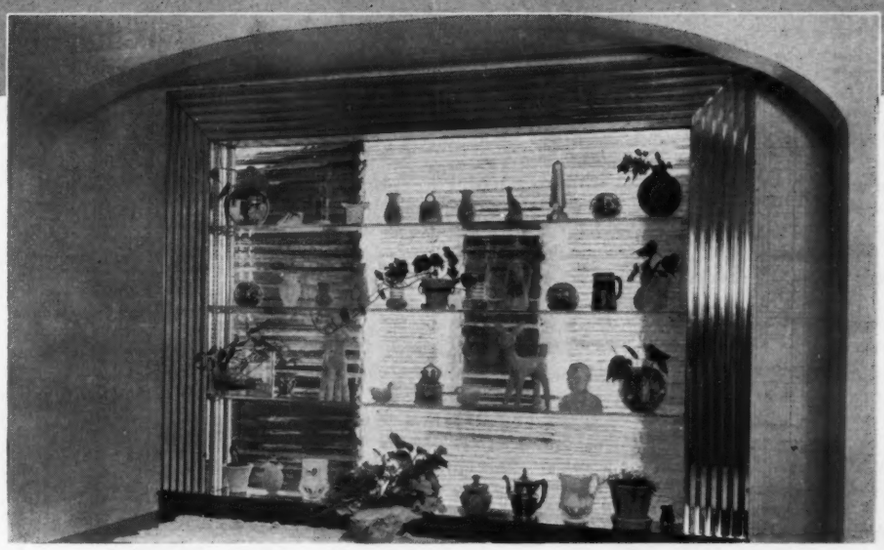

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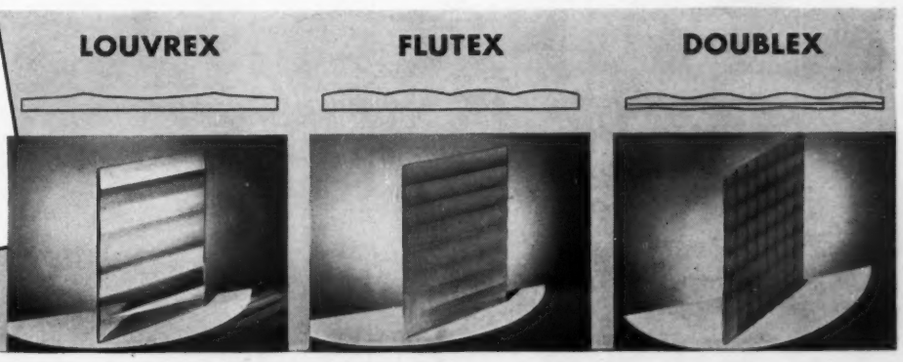

the Peace. Building has been "overwhelmed" by the industrialization of construction methods and today chemical and physical processes are creating new and mighty materials which cannot do else but make the "themes" of architecture collective, thus rendering service to individuals and to society as a whole. It is heartening in all of this excellent writing to find that Mr. Hudnut feels that the art of architecture will not be lost. The article is so full of important words that it is impossible to cover it here. It is advised reading for young and old alike. This article is accompanied by photographs of Wheaton College Science Building; Yuba City, California; Trailer Houses at Fontana Dam; and several renderings of other projects.

The remainder of the magazine is devoted to arts other than architecture. Among the best are articles by Agna Enters, by Virgil Baker, and by Pal Kelman.

(May Issue). In a time of somewhat confused or else specialized journalism it is heartening to find a magazine covering the field of art so thoroughly that it includes architectural comment, and usually sound comment at that. This issue covers the "London Plan" of Sir Edwin Lutyens

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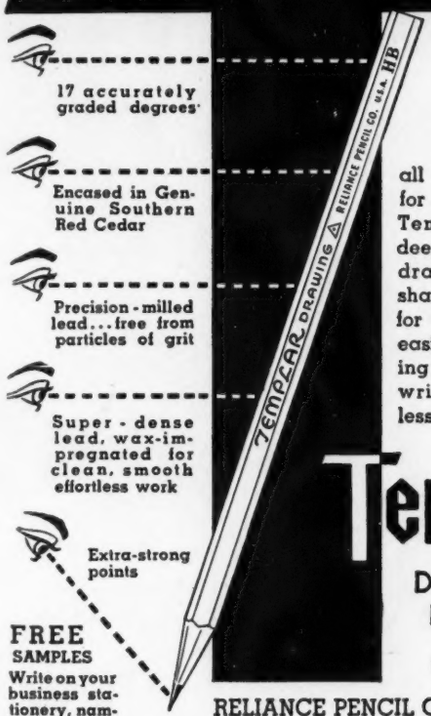
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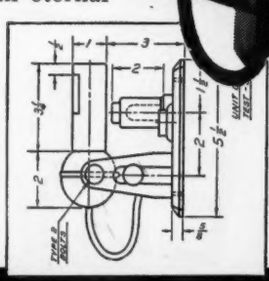
The world is putting Electrons to work in myriads of new devices. For 63 years electrons have "worked" for the users of Higgins American India Inks.

The carbon particles in Higgins India Inks are reduced to a *definite* micron size at which the kinetic energy of the molecules may overcome the force of gravity. The polarized particles "push" one another around thus maintaining an eternal dance termed Brownian Movement. This is the major reason Higgins American India Inks are uniformly black and settle less during storage than any similar product manufactured. Yes, electrons have been working for Higgins users for 63 years.



G-E Electronic Lighting control unit, mounted on wall panel. Courtesy of General Electric Company

HIGGINS INK CO., INC.
271 NINTH ST. BROOKLYN N. Y.

WE ACCEPT THIS CHALLENGE, TOO!

When the smoke cleared away from the charred ruins at Pearl Harbor, there was no decision for us to make. We converted our peace time machines to the job of war with a speed born of vengeance. The skilled men behind those machines began pouring out a steady and ever increasing stream of vital war parts to help bring America a quicker, less costly victory.

Yet with all this, we have deliberately *made* time in each busy day to plan for as quick and as satisfactory a change back to peace time production. *For in those critical days when men lay down their weapons lies the real challenge to America.*

We must be ready, all business must, with new products and new jobs for the men in khaki and blue. We must do this so that every American may look forward to a steady job, a home of his own, better education for his children.

We are fighting now for our lives—we accept this challenge to fight as staunchly for our dreams.

NORTON LASIER COMPANY

466 West Superior Street • Chicago

LCN

DOOR CLOSERS

and the Royal Academy Planning Committee. This plan has justifiably received so much adverse comment that it is interesting to find here somewhat of a defense by Frederick Gutheim. Most important of all is that this plan was designed first in 1937 as a solution to London's traffic problems. As such Mr. Gutheim points out that it is eminently successful, though to Americans who have mostly to do with dividing up vacant plots of land in their planning it is hard to switch to the concept necessary in Britain —that of preservation of many historically important buildings. That the Lutyens plan is not brilliant, nor even good architecturally, Mr. Gutheim admits freely, but he points out that a plan is only as good as the study given it (this one is carefully studied from every planning angle) and the support given it by the people (this one is strongly supported). He admits reluctantly that unless the men overseas intervene, this plan, so bad architecturally, so elemental in layout, will probably be executed.

An exhibition of Mexican painting and photography in the Philadelphia Museum of Art is reviewed favorably and well illustrated here. American circus carving, real "American primitives" without affectation, the works of several amateur painters who improved upon the stylish 19th century professionals which they copied, some excellent examples of American photography, and a consumer's guide to color prints complete the worthwhile material in this well published magazine.

Manufacturers' Literature

Publications mentioned here are all 8½ x 11" unless otherwise specified and will be sent free of charge, upon request. When writing for any of the literature noted here, please mention THE NEW PENCIL POINTS.

Noise Demons

It sounds a bit like the Gremlins, the way Armstrong talks about their little noise demons and the way they visualize them plus their effects. Just looking at one of the illustrations makes one want to live and work in nothing but the quietest of rooms. Their recent 16 page booklet, "How to Eliminate Noise Demons" is another one of the excellent current pieces of manufacturers' literature. First they give space to acquainting the reader with the seriousness of the noise problem; then they explain the construction and the action of Armstrong's Cushiontone, along with its practical factors, such as cost, installation, maintenance. Eight large-size panels show the variety of surface designs possible. Good drawings and photographs follow which illustrate the more common uses of this material, in offices, restaurants, hospitals, factories, theaters. Along with this booklet came four 4-page folders, devoted to the noise demons of schools, hospitals, offices, and restaurants. (Armstrong Cork Company, Lancaster, Pa.)

Reinforced Concrete

One of the best designed manufacturers' booklets that has reached this department in a long time is the "Modern Developments in Reinforced Concrete" prepared by the Structural Bureau of the Portland Cement Association. It is good both in typography and in color. There is an article on "Ribbed Concrete Arch Roof Construction" and one on "Concrete Prestressed with High Yield Point Wire Reinforcement" by Herman Schorer. (Booklet Number 6, Portland Cement Association, 33 West Grand Avenue, Chicago 10, Ill.)

Movable Partitions

A recent handbook on the movable partition walls manufactured by the E. F. Hauserman Company is most thoroughly organized, giving 69 pages of detailed information regarding their 35,000 item stock, their methods of handling jobs, comparison with masonry walls as to cost and permanence, etc., special features such as connections, hardware, wiring facilities, mouldings, glazing, colors, window embrasures, radiator enclosures, fireproof and soundproof qualities. Numerous photographs explain their story well and drawings are quite sufficient but at this point the excellence of graphic presentation stops because the typography is seriously at fault; the latter merely hinders the reader's search for information. (AIA 28A3 and 39B) (Cleveland, Ohio)

Fluorescent Lighting

General Electric has issued a new booklet of 24 pages which describes their Ballasts for Mazda F Lamps (fluorescent). Construction features are touched upon: core and coils, assembly, testing, capacitors, cable, insulation, and designs. Special attention is given to their new *Forlamp, 100-Watt Ballasts* and to their *Three-Lamp 40-Watt Ballasts*. Interesting photographs of their use in war plants are shown. Data pages and detailed diagrams accompany the text. (General Electric Co., Schenectady, N. Y.)

Fabricated Piping

The Flori Pipe Company of St. Louis, Missouri, has just released a very well planned and well printed booklet (64 pages and cover), describing their fabricated piping. To quote "Fabricating piping, oddly enough, has many more applications than most business men realize. In fact, there is scarcely anything tubular in the world that does not come under the head of fabricated piping. Invasion barges and power plants, tank factories and paper mills, battle ships and filling stations . . . they all require fabricated piping—to convey gas, air, steam, oil, and chemicals, or for construction purposes." This booklet covers the various ways in which piping can be used and lists present market prices, a handy compilation for ready reference, with excellent photography to add interest.

Glass Block

Methods of replacing worn-out windows with Insulux glass block are described in detail in a new booklet recently published by the Insulux Products Division of the Owens-Illinois Glass Company, Toledo, Ohio. Photographs of typical installations are included along with specifications, technical data, and typical construction details. The advantages claimed for this type of replacements are: greatly reduced heat loss and heat gain, savings in critical materials, improved lighting, reduced maintenance costs, and elimination of infiltration of dirt and dust. The printing process used is offset, not of the first grade; photographs were not well enough taken; drawings are as good as the average; text is good. (24 pages)

Airplane Hangar Hardware

A Richards-Wilcox booklet presents their line of airplane hangar hardware for the more commonly used applications where the doors roll on wheels attached to the *bottom* of the doors and where the top of the doors is guided but not supported. The reader is referred to the Richards-Wilcox general catalog for hardware carrying doors which are supported from the *top* in tracks attached to the building over the doorway. There are 32 pages of drawings showing the operation of the different mechanisms. (Richards-Wilcox Manufacturing Company, Aurora, Illinois, Catalogue A-80, 40pp.)

Folding Partitions

From the Richards-Wilcox Manufacturing Company, Aurora, Illinois, comes a booklet of 64 pages which gives a good display of their line of folding partitions, both the automatic electrically operated ones and the manually operated; also included are the partition doors and the wardrobes. There is a good sprinkling of explanatory, detail drawings and a large number of photographs but the latter are poorly taken and lack interest even though they serve the purpose of explaining the uses and adaptability of the partitions.

There is a need for highly explanatory photography, art work, and writing in technical publications. Manufacturers have only slightly felt this need—or aimed to fill it; only a glimpse of the possibilities for interesting, thorough description and instruction on their products has been achieved. Probably the war industries will lead the way in this field because of their experience in instructing large numbers of untrained persons; other firms will follow. Then, later, manufacturers will look backward and wonder why they were so slow to visualize better technical publication possibilities. (AIA 19-E-61)